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WE GUARANTEE that of this issue 10,011 copies were printed; that of those 10,011 copies 8,572 were mailed to regular paid subscribers to the Railway Age Gazette and the Railway Age Gazette, Mechanical Edition; 150 were provided for counter and news companies' sales; 189 were mailed to advertisers; 100 were provided for bound volumes, and 1,000 for distribution at Atlantic City.

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The suggestion of President Crawford that the Interchange Rules remain in force for at least two years before being materially changed, is one that will be appreciated by every car inspector and car foreman who has to use them. At best, it is difficult to get an interpretation of the rules that will be satisfactory to all.

When rules are changed it takes several months for the inspectors throughout the country to become thoroughly familiar with them and interpret them correctly. By allowing them to remain in effect for a longer time, the troubles due to these misunderstandings will be minimized and for a year at least cars should be interchanged with a great deal less difficulty than at the present time. Various car associations have realized this and have refused this year to offer any suggestions to the arbitration committee in the hope that this committee would not make any radical changes in the present rules.

President Crawford, in his address, made a good suggestion regarding an arrangement whereby the Master Car Builders' Association could be kept in closer touch with

**M. C. B. Association and the Minor Organizations** effect that a representative of the M. C. B. Association should attend the Chief Interchange Inspectors and Car Foremen's Association Conventions to assist the members of that association in placing correct interpretations on the M. C. B. Rules of Interchange. That association meets for the sole purpose of establishing among its members

a uniform understanding of the rules. In numerous cases it has been found that what they conceived to be the right interpretation was not in accordance with what the arbitration committee intended. This makes it necessary to undue a lot of work, as these opinions are spread through the entire country. With a representative of the Arbitration Committee at the meetings the liability to misunderstandings would be greatly reduced.

The opportunity of making use of scrap lumber from dismantled cars and bridges is not always given proper consideration. With the increasing cost of lumber it presents a field of endeavor that can be made very remunerative. The Chicago, Burlington & Quincy has gone into a study of this problem extensively. At a recent meeting of the Western Railway Club, William Queenan, assistant shop superintendent at Aurora, Ill., stated that from 700 dismantled cars about \$15,000 worth of lumber, rated at \$14. per 1,000 ft., was reclaimed at a total cost of between \$11,000 and \$12,000. This lumber is used for repairs and as excessive amounts accumulate, the lumber is used in the construction of new stock cars, at a very great saving. They even find it expedient to remove the nails from all good sheathing, finding many uses to which it may be placed. The ingenious car man will be able to find many uses for lumber that is now thrown away. As useless as scrap lumber may superficially appear, the possibilities for its reworking have been demonstrated and those roads that have not investigated the matter will be surprised to find what can be done with it.

One of the most important points brought out in President Crawford's address is that of the necessity for increasing the mileage of freight cars. This is a matter which does not concern merely the car department, but the entire railway organization, bearing as it does so directly on both earnings and expenses. Operating officers are particularly interested in this subject and, as stated in the address, in order to obtain the greatest practicable mileage per car per year, concerted efforts should be made. The suggestion regarding elimination as quickly as possible of such rules of the various associations as tend to hinder a prompt car movement, is also a good one. It is, of course, not intended to urge the running of cars that are not in an altogether safe condition, but much can be done to facilitate movement and at the same time give proper attention to repairs. This is a point which should be carefully weighed in deciding on new equipment. The officers who object so strenuously to the expenditure of an extra dollar on any special device or special construction of freight cars, should bear in mind that the cheap, flimsy car is bound to be on the repair tracks more than the car which is substantially built, and that a car undergoing repairs is not earning money for the company.

### STEEL PASSENGER CARS

WHEN we published the article on the Steel Passenger Train Car Situation in the *Railway Age Gazette* of November 21, 1913, our records showed that on January 1 of that year that there were 7,271 all-steel passenger cars in service, 3,296 steel underframe cars and 46,926 wooden cars. A statement just issued by the Special Committee on Relations of Railway Operation to Legislation shows that on December 31, 1914, two years later, there were in service 12,900 steel, 5,700 steel underframe and 43,512 wooden passenger train cars. The figures are not strictly comparable because those for January 1, 1913, cover roads owning 57,493 passenger-train cars and operating 227,754 miles, while the more recent figures cover roads having 62,112 passenger equipment vehicles and operating 245,721 miles. During the past six years the percentage of all-steel passenger cars built has increased from 26 to 74.6, while the percentage of steel underframe cars built has changed from 14.8 to 20.9 per cent.

The older wooden cars are being retired steadily, so that the percentage of steel and steel underframe cars will increase rapidly within the next few years. Wooden cars to the number of 1,048 were retired during the calendar year 1914. It is estimated that to replace the present wooden cars will cost approximately \$560,000,000.

Legislation to require railroads to build nothing but steel or steel underframe cars and to retire the wooden cars within a given period has been advocated for several years, but Congress has never taken any definite action. There would now appear to be no need for such action, as the roads have practically discontinued the building of wooden passenger-train cars and such cars as are now in service will be retired as they become worn out or obsolete. At the rate at which the change is now going on the larger proportion of the roads will have all the steel cars needed in high speed and heavy traffic within a comparatively short time; in fact, many of them are now in this condition.

What our legislators will have to guard against is taking any action which will put the railroads to unnecessary heavy expenditures in changing equipment, when better results can be obtained by using the same money to provide other things which will contribute more effectively to the prevention of accidents and to the safety of the passengers and employees.

#### IMPROPER CHARGES FOR CAR REPAIRS

"It is quite possible that some few car owners deliberately charge for repairs not made, possibly not with the consent of the higher officers, but through the over-zealousness of some of the minor officers who are endeavoring to make a record for low cost of maintenance," is a statement made by a prominent car department officer.

This is a very good answer to the insinuations that have been made regarding the charging for fictitious repairs to foreign equipment. Whether the officers know or do not know that there are irregularities practiced by their subordinates in the repairing of foreign equipment something must be done to correct the evil. The trouble probably lies with the "over-zealous" minor officers and while some may follow questionable methods "to make a record for low cost of maintenance," the majority are guilty of malicious negligence. In other words, some find it easier to make "pencil repairs" than to do the actual work.

In order to overcome this, some mechanical officers have suggested that an inspection bureau be formed to operate under the jurisdiction of the M. C. B. Association, the inspectors being sent to different parts of the country to investigate the practices of the various roads. It would appear that a bureau of this kind would be unwieldy, would increase the work of the association and, unless the number of inspectors was very large, the desired results could not be obtained. Another suggestion that appears to have much more merit is that each road establish its own system of inspection. Such a system is already in effect on some few roads with very good success. With inspectors reporting direct to headquarters, the heads of the mechanical departments can be kept fully informed as to the conditions and govern themselves accordingly. The inspectors being continually on the road, jumping from place to place, will be in a position to make what might be termed "surprise inspections." Then those local inspectors who have been in the habit of making "pencil repairs," not knowing when such inspections are to be made, will be more careful to see that the work is done properly and that all the repairs for which bills are to be rendered are actually made. When it is known that their superiors are determined to have the work properly done and that they will not tolerate any irregularities there cannot help but be a marked improvement.

Had this practice been followed in past years, there would have been far less cause for the above noted insinuations. Many disputes would not have arisen and a large amount of ill-feeling now existing between the roads regarding repair bills would not have been engendered. With the present rules requiring that all foreign cars be maintained in the same serviceable

condition as home cars, the work on foreign equipment has naturally increased and with it the opportunities for a larger number of irregularities. It, therefore, cannot be too strongly urged that every road institute its own system of inspection with a view of determining whether or not the local inspectors are maliciously billing for repairs to foreign cars not actually made. Where this is found to exist, prompt and drastic measures should be taken.

#### LOSS AND DAMAGE TO FREIGHT

SIXTEEN dollars paid out for loss and damage to freight for every \$1,000 of gross freight revenue is a large percentage, and yet it is not an unusual one and is probably not far from the average for all of the roads in this country. A considerable portion of this loss and damage can be traced directly or indirectly to defective equipment. On two roads where campaigns of education have been waged to reduce loss and damage to a minimum it has been found possible to bring the figure down to \$10 for every \$1,000 of gross freight revenue. While the campaigns on both of the roads in question were conducted in such a way as to secure the interest and co-operation of every man who could be at all helpful, and this meant pretty nearly every man in the organization, and while the greater part of the saving was not due to improved equipment, yet that item has been a not unimportant factor in securing better results.

In one case the officer in charge of car design is known to have kept closely in touch with the performance of all of the cars in service as regards the protection of the lading against leakage, pilfering and the elements. He spent much time in keeping in intimate touch with the practical men of the car department and therefore knew almost as much as they did as to where the cars were weak and where they could be improved to advantage. On another road the general manager became interested in studying this phase of the problem and the next order of cars contained features which had never before been used on that road. True, they cost more, but after several years' experience the officer in question is certain that this was one of the best investments that he has ever made.

The trouble has been in too many cases that those who were responsible for the design or purchase of the cars, or who were interested in the cost of conducting transportation, did not really know where the trouble was and how to go about remedying it. One road has achieved excellent results by developing a loss and damage prevention movement similar to the safety first campaigns. Division and general committees have been appointed and to these committees every man in the organization feels that he can make suggestions or call attention to abuses, knowing that the information will not be used for purposes of discipline but to improve conditions and remove abuses.

To reduce and eliminate as far as practicable the losses due to damaged and stolen freight the supervising officers must know in detail just what is responsible for causing the damage. It is not right that the car repairman should think only of getting the work done and the cars off his hands and out of the terminal, but he should make sure that the work which he has done will not prove defective and allow freight to be damaged. The operating man, when damage is done, should insist on knowing the exact causes so that steps may be taken to prevent a recurrence. The mechanical department officers, and particularly those in the car department, should do everything in their power to have the men understand fully just what they can do to help improve the loss and damage record so far as it concerns defective equipment. As suggested by President Crawford, in his address, much can be also done in this respect by giving more attention to proper loading and the bracing of the loading. In addition to this car department employees are often in a position to notice abuses or wrong practices outside of their immediate department which they should be urged to report, not with the idea of spying on anybody, but of correcting abuses.

**TODAY'S PROGRAM**

TUESDAY JUNE 15, 1915

## Discussion of reports on:

Couplers .....	9.30 A. M. to 10.30 A. M.
Safety appliances .....	10.30 A. M. to 10.45 A. M.
Rules for loading materials .....	10.45 A. M. to 11.00 A. M.
Overhead inspection .....	11.00 A. M. to 11.10 A. M.
Interline inspection .....	11.10 A. M. to 11.25 A. M.
Car construction .....	11.25 A. M. to 12.00 M.
Specifications and tests for materials .....	12.00 M. to 12.30 P. M.
Tank cars .....	12.30 P. M. to 12.45 P. M.
Individual paper—What is the value of a patent? By Mr. Paul Synnestvedt .....	12.45 P. M. to 1.30 P. M.

## ENTERTAINMENT

10.30 A. M.—*Orchestral Band Concert*. Entrance Hall. Million-Dollar Pier.

3.30 P. M.—*Orchestral Band Concert*. Entrance Hall. Million-Dollar Pier.

9.30 P. M.—*Informal Dance*. Special Feature. Costume Recital, Miss Betty Lee. Ball Room, Million-Dollar Pier. Don Richardson Orchestra.

**LOST**

Badges 2722 and 3580 have been lost and if found should be returned to Secretary Conway.

**ANOTHER CARNIVAL DANCE TO-NIGHT**

The Carnival dance on Friday night proved so spontaneously successful that Chairman Carr of the entertainment committee has decided to repeat this feature to-night. The hall will be strung with twine as before so that the paper streamers when thrown will hang in festoons. While a special order has been placed for a large assortment of

rubber novelties, such as balloons which when blown up and thrown burst like a bomb. One of the special features of the evening will be afforded by Miss E. M. Kegel and Frank Caslin who will give an exhibition of all the late dances on roller skates.

Miss Betty Lee will sing several songs and the Don Richardson orchestra will furnish all music. This is sure to be the "big" night, so do not fail to come early prepared to enter whole heartedly in the frolic.

**ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS**

The eighth semi-annual meeting of the Association of Railway Electrical Engineers was held at the Hotel Dennis, Atlantic City, June 14. President H. C. Meloy, New York Central Lines, made a brief address welcoming the association to the city. The secretary-treasurer reported a membership of 500, with a cash balance of \$418.91 in the treasury. Progress reports of various committees were presented. The committee on Standardization of Cranes, Turntables and Transfer Tables reported that it was taking under consideration the standardization of motors to be used for these purposes.

The Committee on Compressed Air is to make an investigation of the power used for driving compressors and the abuse of the use of compressed air in shops. The Committee on Train Lighting Lamps is working towards a standardization of the various lamps now used with a view to decreasing the number. It is also making an investigation as to the proper method of rating lamps. The Committee on Standards is working with the M. C. B. Committee on Train Lighting. The Committee on Conduit Specifications reported that tests were being made on the Pennsylvania Railroad which would be available for the committee when completed. A number of minor changes have been made in the Specifications of Wires and Cables and the work of the committee is being broadened out to include specifications for wires to carry

**TRANSPORTATION COMMITTEE**

Top Row, Left to Right—L. S. Hungerford, Jr. (Peerless Rubber Mfg. Co.); R. W. Benson (American Flexible Bolt Co.); T. P. O'Brian (O. M. Edwards Co.); H. Chamberlain (Transportation Utilities Co.); A. L. McNeill (Central Electric Co.); J. T. Anthony (American Arch Co.); J. L. Randolph (Economy Devices Corporation); A. N. Dugan (Bronze Metal Co.); C. C. Schumaker (The Carborundum Co.).

Bottom Row—R. P. Cooley (Chicago Car Heating Co.); W. Anderson (Pantasote Co.); George T. Cooke, Chairman (Chicago Car Heating Co.); D. L. Clement (Pratt & Lambert); A. S. Lewis (Chicago-Cleveland Car Roofing Co.), and E. A. Averill (Standard Stoker Co.).

25,000 volts. The shop practice committee is to report at the annual convention on electricity vs. compressed air for portable tools, electrical furnaces for hardening tools and electro-magnets and magnetic chucks. The Committee on Illumination will report on yard elimination in classification yards.

#### A BUSY DELEGATION

The ten representatives from the Santa Fe have been making a most profitable and systematic inspection of the exhibits. The delegation is headed by John Purcell, assistant to vice president, the other members being Maham li. Haig, mechanical engineer; Charles T. Ripley, general mechanical inspector; H. B. MacFarland, engineer of tests; J. H. McGoff, mechanical superintendent; J. E. McQuillan, mechanical superintendent; Frank W. Thomas, superintendent of apprentices; Albert McRae, editor of the Santa Fe Magazine; M. Robinson, master mechanic, and J. E. Symons, master mechanic. These officers were in attendance at all of the sessions of the Master Mechanics' Association, two of them taking an important part in the proceedings in the capacity of committee chairmen, Mr. Purcell being at the head of the Committee on Boiler Washing and Mr. Haig chairman of the Committee on Dimensions of Flange and Screw Couplings for Injectors.

Mr. Purcell had given his lieutenants instructions to do all the scouting among the exhibits necessary to pick out anything in which the Santa Fe might be interested before Saturday, and to make a note of it. On Saturday morning the entire delegation visited all of the exhibits which had been thus reported and held a joint discussion on the merits of the various devices. In this way a decision was reached as to the advisability of making further investigation and more was accomplished in a few hours than could have been done in a considerable period if it had been necessary for the members to study these devices from such information as they might obtain from other sources and advise among themselves by correspondence or discussion when they did not actually have the devices before them.

Mr. Thomas came east in advance of the rest of the party and attended the annual meeting of the National Association of Corporation Schools, which was held at Worcester, Mass. He is delighted with the progress which has been made by this association and says that the convention last week was the best which has yet been held. Several of the railroads have representatives in this association and seem to agree with Mr. Thomas in his estimate of its work.

#### GOLF ATOP OF THE TRAYMORE

One stunt was pulled off yesterday evening at 6.30 o'clock which was not on the program of the entertainment committee. This was a golf driving contest from the top of the Traymore hotel, the object being to see who could drive a ball farthest out to sea. Those who entered the contest were D. R. MacBain, superintendent of motive power of the New York Central west of Buffalo; S. P. Bush, president of the Buckeye Steel Castings Company; and Clement F. Street, vice president of the Locomotive Stoker Company. Mr. Bush was the winner of the contest. Each contestant drove four balls, and two of those of Mr. Bush went far out to sea, so far, in fact, that they nearly "beaned" the judges who had gone out in a life saving boat to a distance which was assumed to be safe.

The judges were George R. Carr, Chairman of the Entertainment Committee, and Samuel O. Dunn. They were accompanied to sea by J. Will Johnson, president of the Railway Supply Manufacturers' Association; and the boat was propelled and controlled in its wayward course by two sturdy members of the Atlantic City Life Saving Crew.

The tee on which this novel driving contest was held was

a wooden platform which had been improvised on the roof of the Traymore just in front of the front dome. This platform was about 150 feet above the ground, and was so narrow that when the players followed through, their clubs swung out over an aching void reaching clear down to the Boardwalk below. There are some golf courses in this country with tees at the top of pretty high hills, but this is undoubtedly one of the highest tees ever played from.

Mr. Street drove the first, and all his balls sailed out over the Boardwalk, and went pretty far to sea. Mr. MacBain, unfortunately, was not well equipped with a club. He is a "southpaw," and, as his clubs were not at his hotel, it was necessary to borrow one for him. The only thing that could be gotten was a cheap, light brassie, which was obtained from a store on the Boardwalk, and it did not have the right "feel" in his hands. However, he got his balls well away from the tee, considering the difficulties under which he labored.

Mr. Bush drove just as if he had been playing his own course; and that means that his two longest drives would have covered 250 yards on any good course.

While the players were performing on the roof, Mr. Johnson and the judges were having an exciting experience of their own. Mr. Carr took his seat in the bow of the boat and Messrs. Johnson and Dunn sat in the stern. The sea was a little rough, and every time a roller came in it pitched Mr. Carr's end of the boat clear out of the water. In the midst of the proceedings, which means right when the occupants of the boat were most intently watching the doings on the Traymore's roof, a big wave rolled up unexpectedly, deluged Mr. Carr from his hat to his shoes, and then spread itself out neatly and evenly over the rest of the party. The only ones who enjoyed this feature of the game were the life-savers. They had on bathing suits!

The judges picked up the two balls driven out to sea by Mr. Bush, and brought them in to him as souvenirs.

#### COMPARATIVE REGISTRATION FIGURES

The following table gives the number of persons registered at the conventions at the end of the fourth day for the years 1911-15, inclusive:

	1911	1912	1913	1914	1915
Members, M. C. B. and M. M. ....	712	445	575	631	592
Special Guests .....	757	449	495	451	381
Railroad Ladies .....	699	329	426	352	344
Supply Ladies .....	399	218	282	272	224
Supply Men .....	1684	1446	1574	1403	1178

Totals .....	4251	2887	3352	3109	2719
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It will be noted that the number of members of the M. C. B. and M. M. Associations registered this year was greater than up to the same time in either 1912 or 1913. The total number of all persons registered is the smallest in any year in the period, but this is due mainly to the reduction in the number of supply men here. In view of the general conditions prevailing, the registration of railway men shows an encouraging maintenance of their interest in the proceedings of the associations and in related convention matters.

#### ROCK ISLAND APPOINTMENTS

M. B. McPartland has been appointed master mechanic at Goodland, Kan., vice E. F. Tegtmeier resigned. Richard Reiter, general foreman at Valley Junction, Iowa, has been appointed general foreman at Chicago. W. Abington, general foreman at Trenton, Mo., has been transferred to Valley Junction. John Fitzgerald, roundhouse foreman at Chicago, has been appointed general foreman at Trenton, Mo. Wm. Glenn, assistant roundhouse foreman at Chicago, has been promoted to roundhouse foreman, and Frank Maher from Little Rock, Ark., has been promoted to assistant roundhouse foreman at Chicago.

# Master Car Builders' Association Proceedings

Reports on Standards, Brake and Signal Equipment, Car Wheels, Revision of Prices and Compensation for Repairs

The first session of the forty-ninth annual convention of the Master Car Builders' Association was held in the Greek Temple on Young's Million-Dollar Pier, Atlantic City, N. J., on Monday, June 14, 1915.

The president, D. F. Crawford, of the Pennsylvania Lines West of Pittsburgh, called the meeting to order at 9.50 A. M. Prayer was offered by Rev. Newton N. Cadwell, of the Olivet Presbyterian Church, of Atlantic City.

## PRESIDENT'S ADDRESS

A splendid exhibit of railway appliances, skillfully and tastefully arranged for our inspection, has again been prepared by the members of the Railway Supplymen's Association, and it is suggested in order to acknowledge our appreciation of the time, effort and expense incident to its preparation, that all take advantage of the opportunity to become familiar with the various devices which, while primarily designed for railway use, are ultimately for the public good. For after all it is the public that benefits the most from improvements in the means of transportation and the details of its instruments.

The problems involved in the construction, operation, maintenance, interchange and accounting for the use and repairs of cars, seem each year to become more complicated. Notwithstanding the excellent,—yes almost wonderful work accomplished by the Master Car Builders' Association, there remains much to be done, and much that can only be accomplished by more closely co-ordinating the work and rules of the several associations having to deal with the different phases of car construction and operation. We should seek to establish closer relations with the American Railway Association, the Association of Transportation and Car Accounting Officers, and American Railway Accounting Officers' Association, not only for the purpose of a better understanding of the requirements of these bodies, but to avoid duplication of investigations and conflict of rules or regulations. Concerted effort must be made to obtain the largest practicable mileage per car per year, with proper regard for the safety of operation, and to eliminate as rapidly as may seem proper, any rules which unnecessarily hinder the prompt movement and interchange of cars. Any method which would expedite, with efficient safeguards, the movement of freight cars, would be welcomed by those responsible for the financial results of railway operation, as well as by the operating officers. To inaugurate and give impetus to consideration of this subject it might be suggested that this association express formally to these kindred bodies, and all others interested, our desire to confer with them.

Bearing in mind the increasing complexity of the many points included in the construction, maintenance and interchange of cars, it would seem imperative that the members of this association observe more closely the proceedings of such voluntary bodies as the Air Brake Association, Car Foremen's Association, Interchange Inspectors' Association,

and similar associations, in which, from time to time, are discussed questions regarding cars and their use, to the end that information promulgated by them may not be regarded as authoritative insofar as it may conflict in any degree with a strict interpretation of the Master Car Builders' rules.

There is in this suggestion no intent to deprecate or criticize the work of these industrious, capable and energetic associations, but it is highly desirable to avoid conflicting views, as well as to conserve the full benefit of the time and labor of these associations for the railways which employ their representatives. Would it not be advisable for one of the existing committees, or a special committee of this association, to review their proceedings and advise if it will not be possible to make their work more co-operative and consequently more valuable to all.

Since the passage of the amended Safety Appliance Acts in 1910 there has been no important Federal legislation regarding railway cars, but in several of the States, in addition to laws regarding the construction of cabin cars, legislation in which cars or car condition is involved has been considered. In some instances, when proposed laws to limit the length of freight trains, either by measurement or number of cars, were under discussion, much prominence was given to isolated cases of air-brake failures, and, as is too often the case, no mention was made of the fact that every day thousands of trains are handled without any semblance of air-brake troubles. Undoubtedly improvement in maintenance of the air-brake apparatus, coupled with more skillful operation of the device, would have reduced the number of so-called failures, and it is thought that this subject is of sufficient importance to warrant its discussion at one of the sessions of this meeting.

Although already referred to by my predecessors, the subject of the proper application and maintenance of safety appliances is of such importance that it seems desirable to again bring it before you, and to urge that all give careful consideration to the establishment of adequate supervision and inspection of these appliances to insure, as far as may be possible, their

compliance with the several laws relating thereto.

It is not my intention to refer to the committee reports in detail or to anticipate their presentation by attempting to summarize the conclusions. I do, however, wish to present to you some comments on the subjects assigned to, and the work before some of the committees.

The Arbitration Committee, in addition to the consideration of several cases put before them for decision, bears a heavy burden in the formulation and revision of the Rules of Interchange, and during the past year has devoted much attention to the study of the questions submitted to them regarding the code of rules, and to the preparation of the interpretations which have been promulgated to all of the members. Since the publication of the Code of Interchange Rules, effective October 1, 1914, this committee has prepared answers to about 150 questions.



D. F. Crawford  
President, M. C. B. Association

This means that to cover 113 pages of the rules, we now have before us 50 pages of interpretations which, while intended to conduce to a better understanding of the rules, are likely to cause confusion in the minds of those who, when consulting the code, fail to carefully scan the interpretations. That it is necessary to interpret the rules is apparent from the number of questions that have been addressed to the secretary, but from even a casual inspection of the questions it is apparent that by a little study many almost trivial questions would be avoided, and that in several instances the inquiries covered points which warranted submission of briefs for bona fide arbitration.

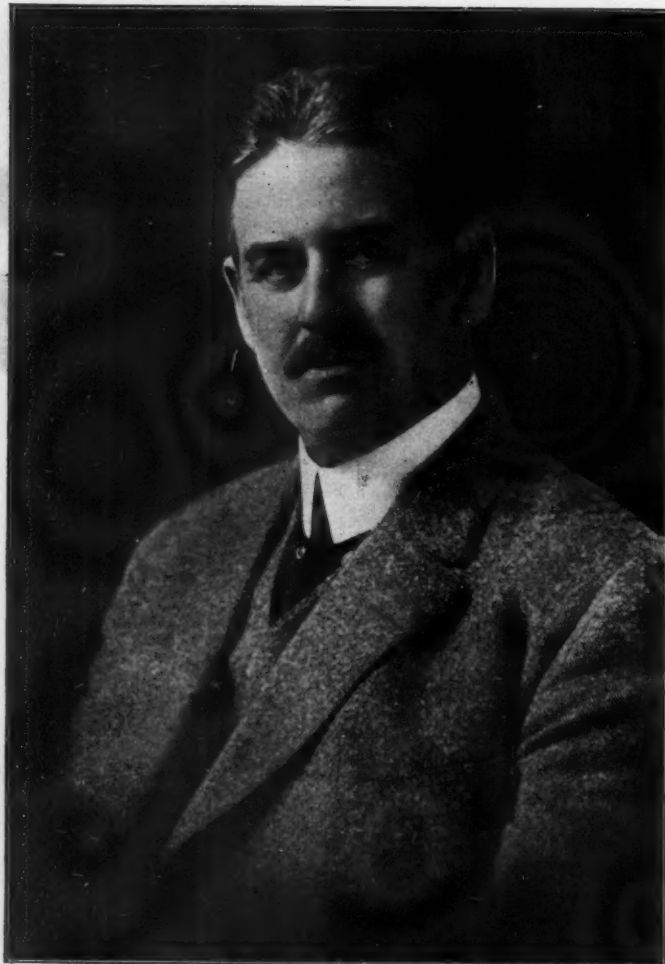
Undoubtedly the number of questions will decrease as the information already available gradually clears up any vagueness in the code, but with the realization that members of this committee are busy men, the labor imposed upon them should be reduced, by the members refraining from placing before them items of small importance and of rare occurrence.

In connection with the report of this committee, and the many interpretations already given to you, it would appear

with the development of the art, and have met changing conditions without radical departure from principles long established. My hope is that ere long we may see many more of the parts involved in car construction, and indeed the designs for the entire car, turned over to this committee for the same thoughtful consideration that has been given the standards and practices already adopted.

The importance of proper maintenance of air brakes has already been referred to, and it might be well for the Committee on Train Brake and Signal Equipment to give this point some attention, in addition to making a careful study of the brake equipment for passenger cars, a subject well worthy of thorough investigation. Would it be asking too much to have this committee review the proceedings of the Air Brake Association, and include in their report to our convention their recommendations regarding any points brought forward by those who are following the details of air brake operation and maintenance more closely than it is possible for us to undertake?

Failure of the members to adopt as standard the brake

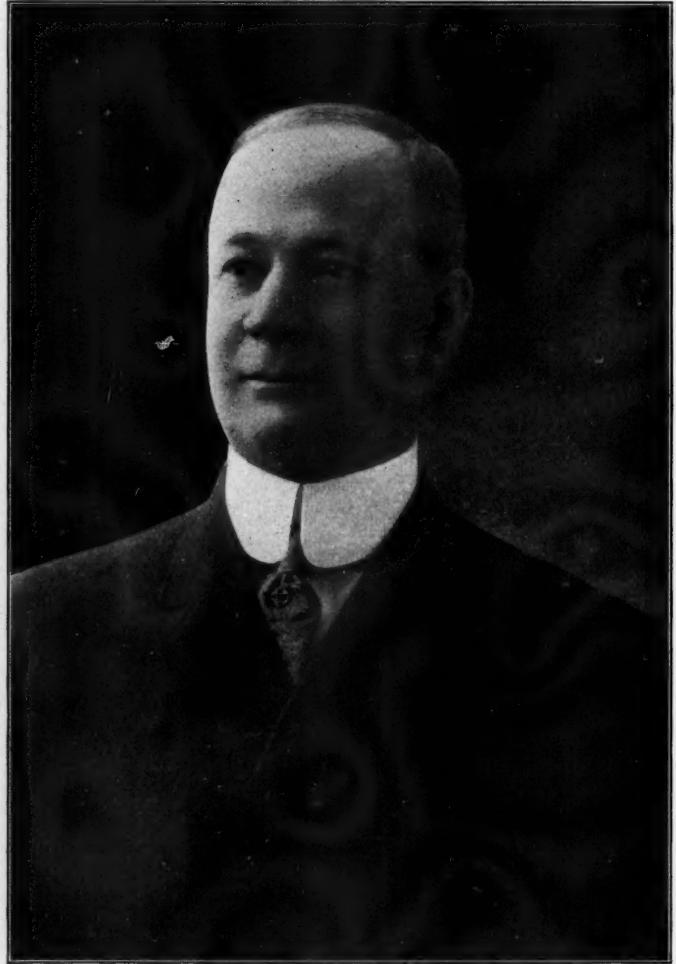


**D. R. MacBain**  
Vice-President, M. C. B. Association

to be advisable to arrange to re-codify the Rules of Interchange, embodying as far as possible, the several points of the interpretations.

In view of the large amount of work imposed upon the Arbitration Committee perhaps it would be advisable to appoint a special committee to assist in the suggested re-arrangement of the rules. When it is considered that 60,000 copies of the code are distributed each year, and that the majority of these are placed in the hands of men who, in addition to the enforcement of the rules, must inspect the cars, the desirability of fixed instructions is apparent. I would, therefore, recommend that most serious consideration be given to the idea of having the Interchange Rules remain in force for two years at least, instead of making material changes at each annual convention.

The motto of our Committee on the Revision of Standards should be, and apparently is, "Hasten Slowly," for they have succeeded in keeping the standards and practices in accord



**R. W. Burnett**  
Vice-President, M. C. B. Association

beam recommended by the Committee on Brake Shoe and Brake Beam Equipment, should not discourage the committee, but rather spur it to further efforts to present to the association such sufficiently impressive reasons as to cause the adoption of a standard beam at an early date. Think of the economy which could be realized, and the convenience it would be were all brake beams alike.

The achievement of a single standard coupler is drawing closer each year. Your committee having this subject before it is giving the most painstaking care to the development of a coupler which will not only be suitable for service conditions, but one that will assist in obtaining economy in maintenance and operation. The task set for this committee is not simple, and their efforts warrant the cordial support of the association.

The enforcement of the Loading Rules of the association is now quite generally insisted upon, and it has resulted in expedited movement of traffic and decreasing claims for loss

and damage to lading. Opportunity still exists for further development and extension of these rules, as the railways paid in 1914 claims amounting to \$32,375,617.55, a material proportion of which might have been saved had the shipment been properly packed and secured.

Unfortunately, there appears to be a tendency on the part of some members of the association to minimize the fact that the contour of car wheels should bear some relation to the limiting dimensions of rails, frogs, cross-overs and switches on which they are used. Wheels not conforming to the standards of this association, or the limits set by the American Railway Association, have been placed in service, without awaiting the results of the investigation now under way by your Car Wheel Committee, working jointly with a committee of the American Railway Engineering Association. While there is no question as to the desirability of taking advantage of every real improvement offered, it would seem to be the part of wisdom to defer the introduction of wheels differing from those approved by the association until such time as they can be adopted by all, their manufacture becom-

M. C. B. box car, the committee has performed most commendable work, and with the co-operation of the members, by heeding the request of the committee for complete criticisms by December 1, 1915, it should be possible to have the designs sufficiently complete to submit them to our next convention for adoption as a recommended practice.

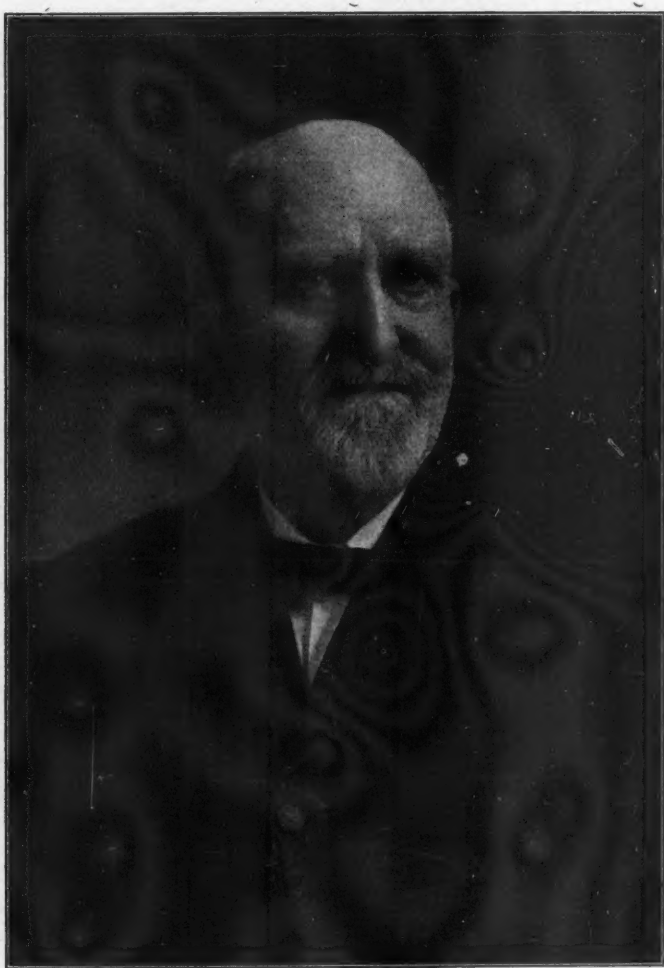
That the Master Car Builders' Association should have complete specifications for all materials that enter into the construction of cars, there is no doubt. Therefore, the work of this committee should receive the support of the members, who, by insisting that materials meeting the requirements of the M. C. B. specifications be used to the fullest extent, will assist in evolving correct specifications.

For the present, at least, the adoption of a standard truck for freight cars is really of more moment than the adoption of a standard car, and to that end the labors of this committee should be directed to harmonizing the conflicting points in design, and thus hasten the general use of a single design.

It is to be regretted that the pedestal type of truck has been introduced for freight car service. This type of truck, while



**C. E. Chambers**  
Vice-President, M. C. B. Association



**J. S. Lentz**  
Treasurer, M. C. B. Association

ing effective at a given date, as has been done several times in the past. The data regarding wheel breakages and other wheel defects, now being collected by the committee, will surely give accurate information upon which to base recommendations as to whether changes in our standard designs are necessary.

The work of the Committee on Car Construction is of such importance that detail reference to it is desirable. Among other items there is submitted specifications for car doors, which should serve as an excellent guide in designing new doors, and assist in preparing designs for the modification and strengthening of existing doors and their fastenings.

A very complete analysis of the principles involved in the design of draft gear attachments is given, which should prove of value to roads designing new cars, as well as for consideration in the adoption of methods for improving cars now in service.

In submitting to you tentative designs of a standard

it may have many points in its favor, requires a journal box differing from the M. C. B. standard, thus compelling all roads to increase the kind and quantity of stock material carried or to accept the less desirable horn of the dilemma, and delay the movement of the car until non-standard material may be obtained from the car owner.

The Committee on Prices for Labor and Material still has before it many points for consideration, and their burden will be increased should this convention look with favor on the recommendations regarding compensation for car repairs. Apparently it would be of great assistance to the committee to have assigned to it members representing the refrigerator and tank car lines, as the labor and material required for such cars differ materially from those ordinarily used by the railways. I would, therefore, suggest that the Executive Committee give consideration to the appointment of such members to this committee for the coming year.

The salient features of train lighting and equipment seem

to have been fairly well established through the efforts of the committee, and it is desirable to have the benefits of their supervision over the subject, so that future extension may be in line with, instead of contrary to, simplicity in taking care of the cars of various companies at joint terminals and through line connections, where such exist.

When rules regarding the construction and equipment of tank cars were first promulgated by the association, much objection was made to them and their enforcement. I wonder if we all fully realize what the work of this committee has meant in added safety of transportation. Notwithstanding the tremendous increase in the amount of inflammable and explosive liquids transported since the inception of the committee, the number of fires and the effect of such fires, have been much reduced. During 1914, with the remarkable movement of gasoline brought about by the growing use of motor vehicles, but 80 accidents occurred. While perhaps the work already accomplished has lessened the labors of the committee, it is recommended that such a committee be continued, and if advantageous, to have its sphere extended to assisting the Bureau of Explosives in its work.

In giving consideration to the settlement prices for reinforced wooden cars, I might caution you that any prices determined upon apply only to cars destroyed away from the owner's line, and care should be exercised that our rules are not complicated with many technicalities in endeavoring to cover circumstances which, at most, are of but rare occurrence.

The study of draft gear is of the utmost importance, as with couplers of increased strength it is quite likely breakage will occur in other parts of the car unless draft gear of adequate capacity is provided, and the committee should be continued until it has submitted, for adoption, requirements as to dimensions and capacity for both spring and friction draft gear.

The attention of the members is directed to difficulties experienced by your several committees in obtaining replies to their circulars of inquiry. It is expected that every member will reply fully and promptly to every circular received. Without replies from a large majority of the members it is quite possible that the committees may be misled and spend much time in making reports, which will not be acceptable to the convention. The high standard of the work already done by this association should be the incentive to all to contribute prompt and accurate information to the committees.

During our convention of 1909, in a topical discussion on "The Abuse of the M. C. B. Repair Card," the following statement was made:

"The repair card unfortunately makes possible the misuse, which there can be no doubt is often indulged in. Prominent railways quite frequently render bills for defects which seem unreasonable on their face, etc."

Following this discussion resolutions were adopted calling on the members to file with the Executive Committee any evidence tending to show misuse of the repair card. The subject was referred to at the 1910 convention, and again at the 1912 convention. Notwithstanding repetition of the requests of the Executive Committee for evidence, but one definite case was brought to their attention. While six years have elapsed since this subject was first brought to your attention it is apparent, from communications which I have recently received, that the efforts of the Executive Committee have not succeeded in eliminating improper billing. Although I do not believe, for one moment, that the alleged improper practices are at all widespread, or that they are indulged in with the consent or knowledge of the officers of the railways, there is sufficient ground to warrant the association taking cognizance of the conditions.

It has been intimated to me that our rules should be revised to take care of this situation, but I have been unable to determine how any additional legislation would prevent anyone who wanted to do so, from making a bill for repairs not made, especially if the car was too far from the owner's line to admit of checking. There is no doubt that the cause for a large proportion of the improper bills may be traced to the misunderstanding of the rules by the inspectors, repairmen and bill clerks. However, I do not think this association should rest when criticism is even possible; therefore, I would recommend:

1.—That suitable resolutions be approved by the convention and forwarded to each of the adherents to the Rules of Interchange.

2.—That the Executive Committee renew their requests for evidence of improper billing.

3.—That a special committee be appointed or the Arbitration Committee be authorized to confer with the proper committee of the American Railway Accountants' Association, to formulate, if possible, methods which will permit of more accurate accounting for car repairs.

4.—That the American Railway Accounting Officers' Association be requested to give consideration, at the earliest possible date, to adopting a rule requiring that all bills for repairs to cars be rendered within 90 days from the date of making repairs.

5.—That each member of this association will take such steps as will insure those having to do with repairing of cars and billing for such repairs on their lines, being fully instructed as to the meaning and limitations of the rules.

As accounting for the repairs of cars is closely interwoven with the Rules of Interchange, and on nearly all railways one or more men have become quite familiar with the rules of the association, and many times the services of men with such knowledge would be of value on our committees, it is suggested that consideration be given to the revision of the constitution to make chief motive power clerks, motive power accountants and M. C. B. bill clerks, or similar employees, eligible for membership.

At the present time the constitution requires that only such private car lines as may own 1,000 cars or over may have a representative member in the association. In order to have full representation I would suggest that the constitution be so changed as to permit private car lines operating 500 cars or over, to name one representative member.

For the future work of the association three items seem to me to stand out prominently:

1.—Standardization of equipment. Much indeed has been accomplished, but up to the present time attention has been largely devoted to dimensions and details. Of course, each detail decided upon gives promise of ultimately reaching a conclusion on the larger problem, but is not now the time for this association to agree on standard freight car trucks, standard box, stock, refrigerator, hopper, gondola and flat cars? We all remember the letter written by E. P. Ripley, president of the Atchison, Topeka & Santa Fe on this subject, which was read at the convention last year. Can we not, by concerted efforts, adopt standards which will make unnecessary such stimulation?

2.—Simplification of the Rules of Interchange. One has but to read in the report of the Arbitration Committee the suggestions they receive as to changes in the rules, to fully realize how much has already been accomplished in this direction, but I trust they will harden their hearts and make even less changes than they have in the past. The members can assist them very much indeed by confining their recommendations for changes to those items only which are frequently involved.

3.—Co-operation with the American Railway Association in expediting the movement of cars.

The expenses of the Association approximate 9-10 of one cent per car per year, including salaries, rent, printing (which is a large item) and all other items, and when we consider all that is accomplished by this very small expenditure, it is indeed remarkable.

Of course, this amount does not include the amount expended by the railways for experiments made by them, or for the time and expenses of those engaged in M. C. B. work, but even if this were added it would be found that the Master Car Builders' Association has given to the railways and the public a very large return on a small investment.

At times it is desirable for the Association to undertake certain tests, such as those on brake shoes, brake beams, etc., but recently the available funds have not been sufficient to permit such work. To meet this condition it is suggested that when funds for such work are desirable, the question of an assessment for the purpose be submitted to letter ballot of the representative members of the association. An assessment of 1 or 2 cents per car would sufficiently provide for the majority of the work undertaken.

#### ASSOCIATION BUSINESS

Secretary Taylor presented his report, which showed that the present number of active members is 429, representative members 502, associate members 13, life members 19, making a total of 891 members. During the year 66 additional roads and private car lines have become subscribers to the rules of interchange. The report of the treasurer, showed a balance on hand of \$627.91. The reports of the secretary and treasurer were referred to an auditing committee consisting of J. M. Borrowdale, I. C.; W. C. A. Henry, Penn. Lines; and T. J. Burns, M. C.

The Secretary: At a meeting of the executive committee held last evening, it was decided to recommend that the dues of active members be fixed at \$5 a year, and that of representative members at \$7 a year.

(The recommendations of the executive committee were confirmed by the Association.)

The executive committee proposed an amendment to the

constitution intended to make more explicit the voting power of active members. This will lie over till next year before being voted on.

#### REPORT OF THE COMMITTEE ON NOMINATIONS

The committee suggested the following: For President: D. R. MacBain, S. M. P. & R. S., N. Y. C. Lines West; For First Vice-President: R. W. Burnett; For Second Vice-President: C. E. Chambers, S. M. P., C. R. R. of N. J.; For Third Vice-President: T. W. Demarest, S. M. P., Pa. Lines West—N. W. System; For Treasurer: J. S. Lentz, M. C. B., Lehigh Valley R. R.; For Executive Members: C. E. Fuller, S. M. P., Union Pacific R. R.; F. E. Gaines, S. M. P., Central of Georgia; I. S. Downing, G. M. C. B., C. C. C. & St. L. Ry. The balloting will take place on Wednesday morning.

#### REVISION OF STANDARDS AND RECOMMENDED PRACTICE

After due consideration of present Standards and Recommended Practices of the Association, together with replies from members to the Circular of Inquiry, also requests involving Standards presented through the secretary, the committee submits the following report:

[EDITOR'S NOTE:—In abstracting the report we have left out several items referring to corrections on the drawing plates which the committee concurred in and referred to the secretary for action; also several paragraphs referring to suggestions which did not meet with the approval of the Committee or were of minor importance and were referred to other Committees or otherwise disposed of.]

##### JOURNAL BOX AND DETAILS. (Standard)

Pages 634-637

For Journals,  $3\frac{3}{4}$  by 7 in. Sheet M. C. B. 3.  
For Journals,  $4\frac{1}{4}$  by 8 in. Sheet M. C. B. 6.  
For Journals, 5 by 9 in. Sheet M. C. B. 9.  
For Journals,  $5\frac{1}{2}$  by 10 in. Sheet M. C. B. 12.  
For Journals, 6 by 11 in. Sheet M. C. B. 12-C.

A member suggests that journal box wedges be provided with hole through front flange of wedge for all sizes of journals to facilitate removal of wedge by use of packing hook. The Committee concurs in this recommendation.



**T. H. Goodnow**  
Chairman, Committee on Revision of  
Standards and Recommended  
Practice

##### MARKING OF FREIGHT EQUIPMENT CARS. (Standard)

Page 761. Sheet M. C. B. 26-A

The Committee wishes to renew the recommendations to the 1914 Convention, at which time revised Sheet M. C. B. 26-A

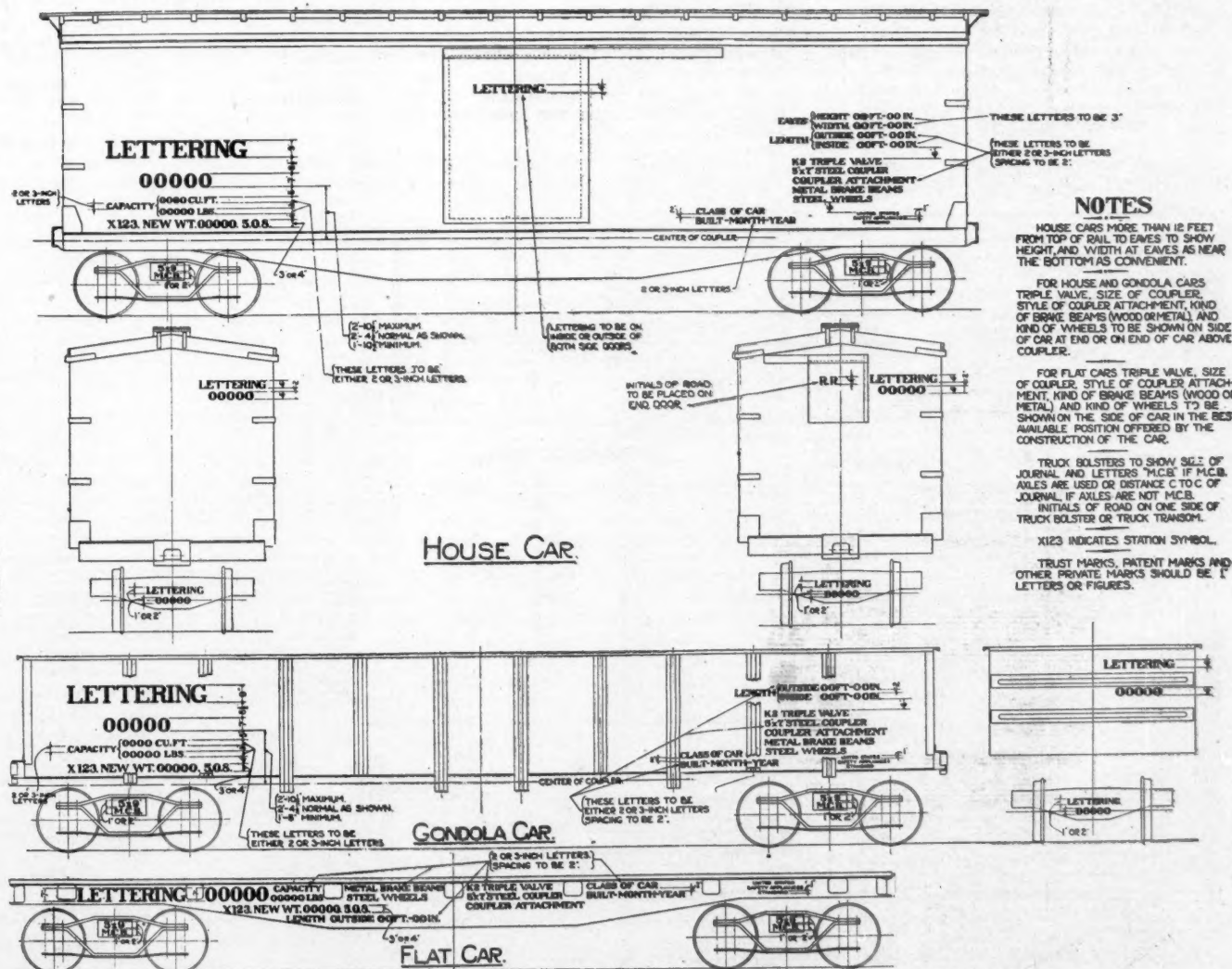


Fig. 1.—M. C. B. Standard Marking of Freight Cars

(see Fig. 1) was presented, and was lost by letter ballot, and again presents same, with the exception of the omission of the stenciling of light weight on end of car.

**LINING FOR OUTSIDE-FRAMED CARS. (Recommended Practice)**

Page 759. Sheet M. C. B.—F

Through the secretary, communication was received from W. J. McBride, president of the Haskell & Barker Car Company, regarding the desirability of standardizing lining for outside-framed box cars.

Since the adoption of 1/4-in. lining in 1913 as Recommended Practice, the committee believes that it is desirable with future built cars to adopt the additional sizes shown in Fig. 2 as Recommended Practice.

**SPRINGS AND SPRING CAPS FOR FREIGHT-CAR TRUCKS. (Recommended Practice)**

Page 877. Sheets M. C. B.—H and H-1

The committee recommends that springs and spring caps, as shown on Sheets H and H-1, be advanced to Standard.

**STEAM HOSE COUPLINGS. (Recommended Practice)**

Page 873. Sheet M. C. B.—Q-1

A member calls attention to the difficulty in interlocking of the different makes of steam heat couplers due to the guard arm not being long enough, or too low, to provide a bearing for some of the types of locks that are being used, and suggests changing of the present M. C. B. design to provide for the guard arm being of sufficient length and height to make all of the coupler locks effective.

The committee concurs, and recommends the appointment of a special committee to go into this matter, taking it up with the coupler manufacturers with a view of adopting a Standard M. C. B. coupler.

**PLATFORM SAFETY CHAINS. (Recommended Practice)**

Page 758

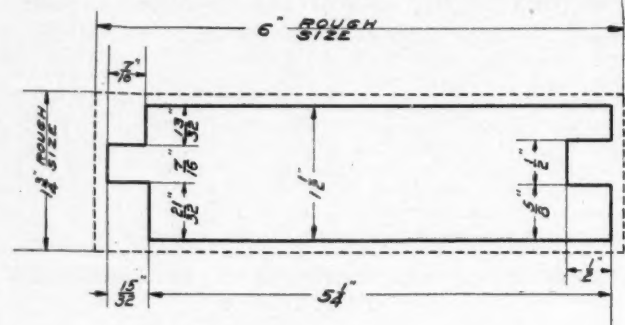
Several members suggest safety chains as one of the desirable standards for the interchange of passenger equipment. The committee concurs, and in view of the changes in passenger equipment since the adoption of the present Recommended Practice, suggests that this be referred to a special committee for investigation and report, and to include all appurtenances on end of car below platform.

**DEFINITIONS AND DESIGNATING LETTERS OF GENERAL SERVICE—FREIGHT EQUIPMENT. (Recommended Practice)**

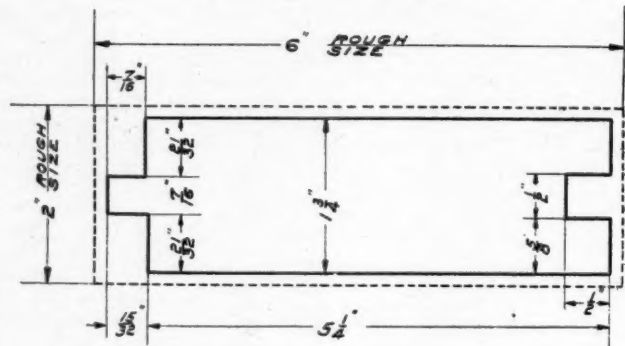
Page 887

Through the secretary, request was received from Arthur Hale, general agent of the American Railway Association, for

change in the description of "XI" box car, insulated, as follows: "A box car having walls, floor and roof insulated, not equipped with ice bunkers or ice baskets. This car ordinarily used for



**SIDE LINING FOR OUTSIDE FRAMED CARS.**



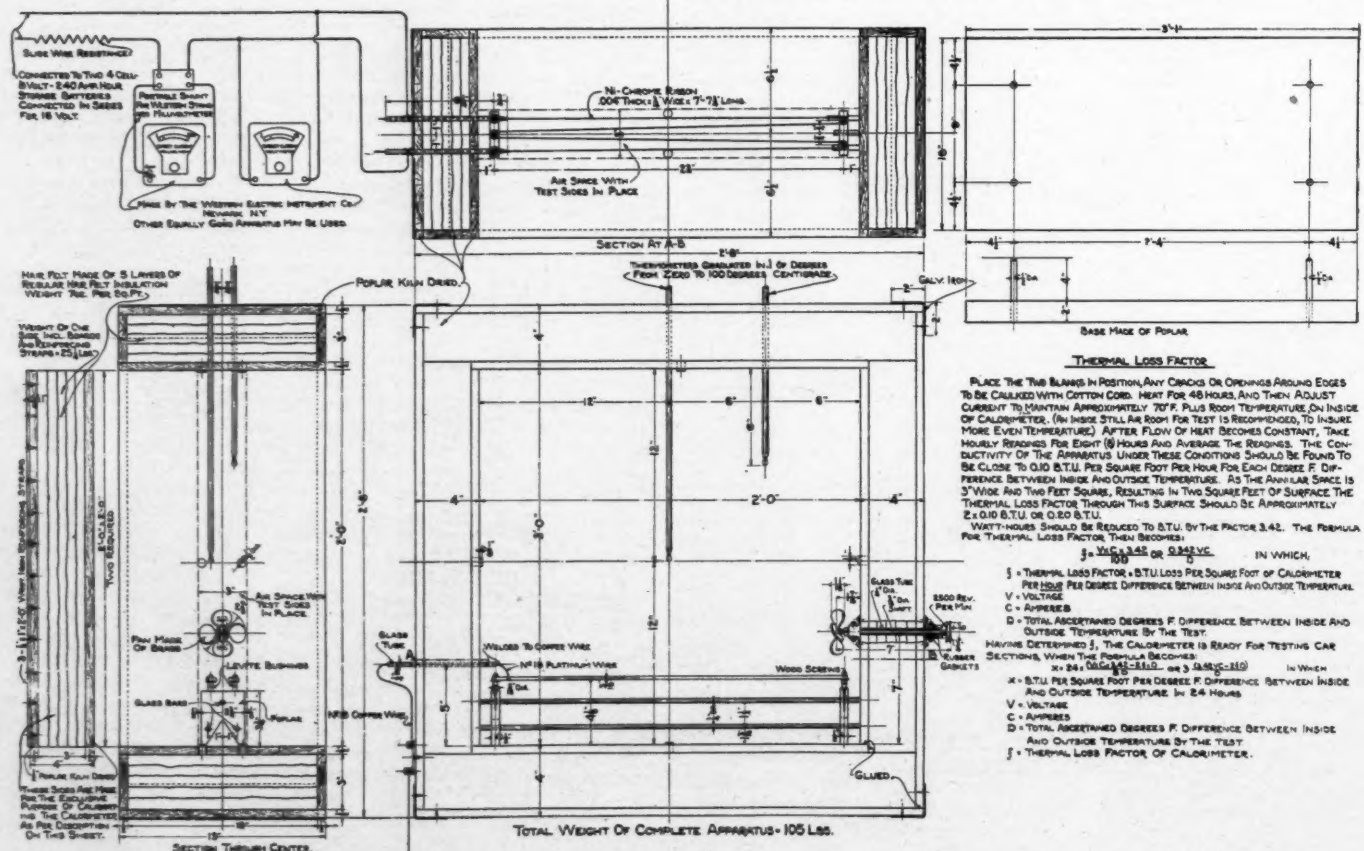
**END LINING FOR OUTSIDE FRAMED CARS.**

**Fig. 2.—Recommended Lining for Outside Framed Box Cars**

transporting vegetables, freight, etc." The committee concurs in this recommendation.

**NEW SUBJECTS**

A member suggests that a standard height from rail to top of platform buffer for passenger cars be established, this to be



**Fig. 3.—Arrangement of Apparatus for Making Insulation Tests—Approved by Government Railway Mail Service**

nominally 51 in. The committee concurs in this recommendation.

A member suggests that the method of making insulation tests, together with description of testing machine as approved by the Government Railway Mail Service, be incorporated in the M. C. B. Proceedings as follows:

"SECTION 23.—INSULATION.—(a) The car shall be insulated throughout, including floors, sides, ends and roof (except pier panels), with material of such a nature that it can be securely fastened so as to withstand the vibration incident to railway service. The insulating material must be such that it will not support combustion, will not absorb moisture beyond its own weight, and when wet, will not become corrosive.

"(b) Side and end wall and roof insulating material shall be securely fastened. Where the nature of the material permits, it shall be cemented; and also mechanically clipped if necessary for proper support. Floor insulation shall extend the entire distance between side walls either in one full width or in sections fitted between floor supports and be secured in place.

"(c) The construction of side and end walls and roof of car shall be such as to avoid or reduce to a minimum continuous metal connection from outside to the inside of the car.

"(d) To insure maximum of insulating and sound-deadening efficiency, the construction at the junction of side and end walls and floor shall be such as to prevent the circulation of air through the side and end walls or through the floor or into the car.

"(e) The thermal efficiency of the materials in side and end walls, in roof and in floor, must be such that a test duplicate section through walls, roof or floor (duplicate with the exception of framing members such as posts, braces, carlines or stringers which are to be omitted), will not transmit, when subjected to the test hereinafter described, more than the following amount of heat per square foot of surface in twenty-four (24) hours for each degree Fahr. difference in temperature between the inside and outside walls of the section.

"For side walls, end walls and roof.....8 B. t. u.

"For floor .....7 B. t. u.

"The method of testing shall be as follows:

"A calorimeter, as illustrated in Fig. 3 and described in R. M. S. drawing, Sheet 18, shall be used in all tests. It shall be carefully constructed and of the materials indicated and before used must be standardized for its thermal loss factor. The sections to be tested shall truly represent the materials as used and disposed in the car.

"The heat must be supplied by direct electric current of constant voltage, measured by standardized instruments. The difference between inside and outside temperatures must be held as nearly seventy degrees Fahr. as possible. Readings of temperature and current shall not be recorded until forty-eight hours after heat is turned on and test begins, in order to insure thorough heat saturation of calorimeter and test sections. The duration of actual test shall be eight (8) hours, during which time temperature and electric readings shall be made and recorded each hour or more frequently, if considered necessary. The average of all readings thus recorded shall be taken as the final result. All differences regarding results which may arise between the Post-office Department and the railroad companies affected shall be referred to the United States Bureau of Standards for decision."

The committee concurs in this recommendation.

The following suggestions were received in answer to the Circular of Inquiry No. 18, but in the opinion of the committee were not directly involved in the interchangeability of passenger cars and are, therefore, mentioned in this report with no further recommendation except to bring them to the attention of the Association in the event that it should be felt that further consideration should be given, and in that case to be referred to special committees: Emergency tool equipment. Retainer valve location. Standard requirements for brake beams similar to requirements for freight cars. Hand brake pawl and shaft and a uniform percentage of braking power and a fixed basis for figuring this. Coupler shanks on passenger cars. Standard dimensions for diaphragm face plates. Uniformity between wood and steel passenger equipment as to the height of the door threshold above the platform. Distance from face of buffer to pulling face of coupler to be not less than 25½ in.

The report is signed by:—T. H. Goodnow (C. & N. W.), chairman; W. H. V. Rosing (St. L. & S. F.); C. E. Fuller (U. P.); A. R. Ayers (N. Y. C.); O. C. Cromwell (B. & O.); O. J. Parks (Penn. Lines), and R. E. Smith (A. C. L.).

In presenting the report the chairman, T. H. Goodnow, C. & N. W., said: That since the report was closed one or two communications had been received which should be mentioned and acted on. One was a letter from Mr. J. T. Wallis, general superintendent motive power, Pennsylvania Railroad, stating that manufacturers of drop forged wedges of the M. C. B. type, have recently called attention to the fact that

these wedges could be made at less expense if the arc recess on each side bearing face were omitted. The omission of these recesses gives greater bearing surface, and, therefore, less wear between parts in contact, aside from permitting cheaper manufacture. The letter recommended that the M. C. B. drawings of all journal box wedges and bearings be revised, omitting the arc shaped recesses where the wedges and journal bearings abut against the sides of the journal box.

The other letter was from R. B. Kendig, chief mechanical engineer, New York Central, and requested that a recommendation favoring the location of the uncoupling lever of passenger equipment on the left-hand side facing the car, be submitted to letter ballot.

#### DISCUSSION

R. L. Kleine (Penna. R. R.): Under Marking of Freight Equipment Cars, the committee recommends the omission of light-weight stencilling on end of cars. The committee on car service rules of the American Railway Association, in their Rule No. 11-A, state all freight cars shall be light weight stencilled, and shall be marked in accordance with M. C. B. rules. Light weight marking is a transportation matter and I believe before this is submitted to letter ballot the committee on standards should have a conference with the proper committee of the American Railway Association to determine what they desire.

T. H. Goodnow: The committee felt that the present standard of the Association was not in accordance with present practice, and that if the standard practice were brought up to date, it would probably accomplish some results and get roads more in line in the stencilling of their equipment.

J. J. Hennessey (C. M. & St. P.): This question was pretty thoroughly discussed before the Convention a year ago. The consensus of opinion was that the lettering on the end of cars was unnecessary. It delayed the weighing of cars. It entailed a great deal of expense that was not really considered necessary, and I believe it is only on rare occasion when the lettering on the end of cars is made use of. It seems to me that the matter in its present form is all right. The customary way of weighing is to push a train of cars over the scale, and stencil them on the side. If you are going to put the weight on the end of the car, you have to hold up the train while you put men in between the cars to do the necessary stencilling. We will not derive from it any benefit commensurate with the expense incurred.

C. E. Chambers (C. of N. J.): Regardless of the expense we will still be required to stencil the light weight on the end of the cars. There are a good many things we would like not to do, but some other department requires that they be done.

T. H. Goodnow: The light weight on the end of the car is optional at the present time. While it was shown in the standards, it was not carried out by many of the railroads. If the recommendation should carry by letter ballot as it stands it would still leave the matter optional with the railroads. Those stencilling would continue to do so, and those who do not now stencil would not do so.

F. H. Brazier (N. Y. C.): The lettering is entirely uncalled for and unnecessary. I do not think that we should ask the men to go between the cars for this purpose as it is an unsafe practice.

(The recommendation regarding the stencilling of light weight on the ends of cars was referred to letter ballot without conference with the American Railway Association.)

The President: Is it your intention to submit a supplementary report in regard to stencilling light weight and capacity on tank cars, item No. 160?

T. H. Goodnow: As a result of action since this report was printed that will be necessary. It will come up at the arbitration committee meeting and in sending it to letter ballot, will be changed in accordance with whatever action is taken by the convention at that meeting.

The President: What is your suggestion as to the two communications received?

T. H. Goodnow: Had Mr. Wallis' communication in regard to the journal bearing wedges, been in the hands of the committee at the time the report was considered, it would have embodied it in the report and presented for letter ballot. If the convention will approve, we will include it in our letter ballot, and then it can be acted on by the members. The matter of uncoupling levers has not been discussed by the committee, and the different roads vary in their opinion on that matter. It is a subject which should go to the standards committee for consideration.

F. W. Brazier (N. Y. C.): It seems singular that the Master Car Builders' Association has one location for the uncoupling lever for freight service, and another for pas-



very close margin. The committee has decided to bring this matter before the Association for reconsideration.

#### CLASP TRUCK BRAKE FOR PASSENGER EQUIPMENT CARS.

To date there are in service about 2500 sets of truck clasp brakes in use on modern passenger car equipment on about a dozen leading railroads of the country. So far as your committee has been able to learn this type of rigging is maintaining its claims for reduced brake shoe wear per given number of foot-pounds of brake work done, for reduced number of hot journals in so far as the brake may be responsible for them, for smoother riding of car during time of brake action and for remarkable low cost of maintenance both with respect to the parts of the rigging itself and to the cost of brake shoe renewal, while the stopping efficiency is about 20 per cent greater than the single shoe arrangement. Where the wheel load is approximately 12,000 lb., clasp brakes should be applied.

The committee recommends, therefore, that truck clasp brakes be applied to all four-wheel truck passenger cars weighing 96,000 lb. or over, and to all six-wheel passenger cars weighing 136,000 lb. or over.

#### HAND BRAKES FOR HEAVY PASSENGER CARS

This subject has engaged the attention of the committee during the past year, but so far no design of hand brake gear examined seems to be entirely satisfactory. What is needed in a hand-brake rigging for heavy cars is one that will take up quickly



**R. B. Kendig**  
Chairman, Committee on Train Brake  
and Signal Equipment

all slack in the brake chain and bring the shoes in contact with the wheels—this part of the operation can be performed with comparatively low leverage; then when the shoes are in contact with the wheels, means for easily increasing the leverage sufficiently to permit of the average man producing the required brake force, this increased leverage to come into play when the shoe movement is practically little or nothing.

The question of whether it would not be better to divide the hand brake so as to have it operate on a single truck has arisen and in the judgment of the committee there is much to recommend serious consideration of this plan, since it permits of a reduction in the total leverage and enables the operator to apply the brake on the single trucks with an effectiveness in excess of what is obtainable where the brake operates on both trucks, and what is very important, this effectiveness is obtained in much less time.

#### HOSE COUPLING GASKET GAGE

The committee has examined several designs of hose-coupling gasket gages for use in determining whether gaskets are of proper dimensions or not, with the result that the one illustrated herewith is recommended for general use. This gage has the advantage of being made all in one piece making it convenient for use, and gaskets conforming to its limits will be satisfactory so far as dimensions are concerned, for service.

The report is signed by:—R. B. Kendig (N. Y. C.), chairman; B. P. Flory (N. Y., O. & W.); J. M. Henry (Penn.); R. B. Rasbridge (P. & R.); L. P. Streeter (I. C.); A. J. Cota (C., B. & Q.), and W. J. Hartman (C., R. I. & P.).

(It was noted that the items on the conductor's valve, clasp truck brakes and hose coupling gasket gage be submitted to letter ballot as recommended practice.)

### BRAKE SHOE AND BRAKE BEAM EQUIPMENT

The committee has devoted its entire attention this year to the subject of brake beams, the work on brake shoes having been completed for the present at least. The committee, however, submits a resume of the tests so far made on brake shoes for the years 1906 to 1914, inclusive, as showing the data which underlie the specifications of this Association at present in force.

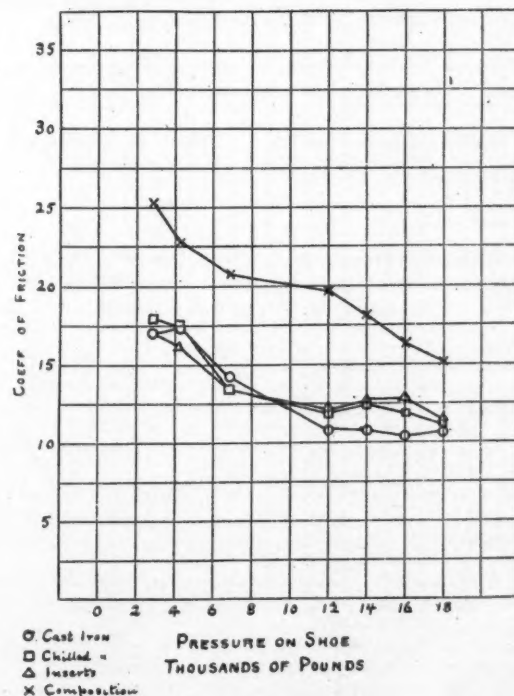
#### BRAKE SHOES.

During the years 1906 to 1914, a considerable number of brake shoes of different materials and construction have been tested



**C. H. Benjamin**  
Chairman, Committee on Brake Shoe  
and Brake Beam Equipment

on the Master Car Builders' machine at Purdue University. Determinations have been made of the average coefficient of friction, the rise in the coefficient of friction of the average coefficient of friction, the rise in the coefficient of friction at the



**Fig. 1.—Mean Coefficient of Friction (in per cent) of Brake Shoes on Steel Tired Wheels at 65 M. P. H.**

end of the run, and the loss of weight of the shoe in comparison with the number of foot-pounds of work done. The shoes have been tested at various speeds ranging from 20 to 80 miles per

hour, and under pressures of application varying from 1080 lb. to 2000 lb.

The materials have been classified as follows:

- Plain cast iron such as can be easily drilled.
- Chilled cast iron where the surface has been partially or wholly hardened by chilling.
- Cast iron shoes with inserts of harder material.
- Shoes having a cast iron shell filled with a comparatively soft composition as in the Pittsburg shoe.

The readings for each group have been averaged and these averages plotted as shown in the accompanying plates. Figs. 1, 2 and 3 show the variation in mean coefficient of friction while Figs. 4 and 5 show the loss of weight compared with the number of foot-pounds of work done.

**Conclusion.**—It is apparent from Figs. 1, 2 and 3 that the coefficient of friction diminishes as the pressure on the shoe is increased, but that for pressures from 12,000 to 18,000 lb., inclusive, the difference is slight. It is furthermore apparent that pressures in excess of 18,000 lb. are not economical.

Reference to Fig. 2 shows that the coefficient of friction at high speeds is very much less than at moderate speeds; the average coefficient at 80 m. p. h. being less than 10 per cent. or less than one-half the corresponding average at 40 m. p. h.

The coefficient of friction of filled or composition shoes is in

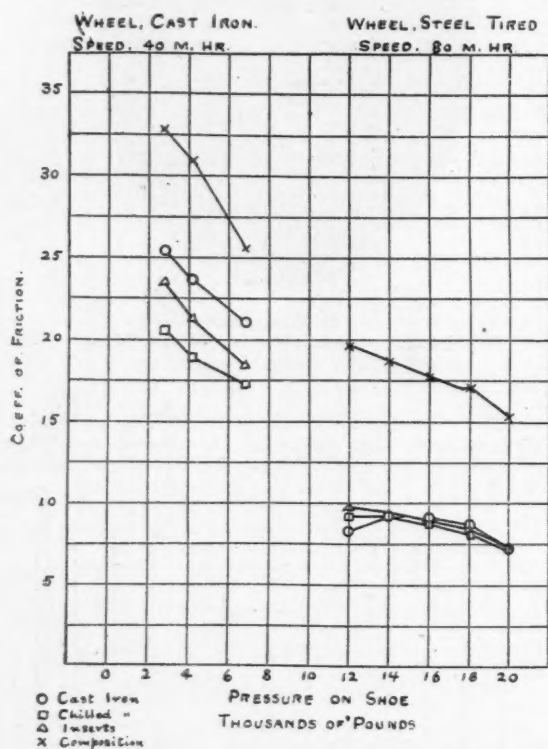


Fig. 2.—Mean Coefficient of Friction (in per cent) of Brake Shoes on Cast Iron and Steel Tired Wheels at 40 and 80 M. P. H., Respectively

all cases considerably greater than the average for the other three groups, being from 50 to 100 per cent. in excess.

It is apparent from Figs. 4 and 5 that general conclusions can not safely be drawn as to the effect of speed and pressure on the loss of weight, except that pressures in excess of 18,000 lb. cause an abnormal loss.

An inspection of the results show marked discrepancies in the loss of weight of two shoes of the same material under similar conditions, and that it can not with certainty be predicted whether the loss of weight will be greater or less as the pressure is increased. The general trend of the lines, however, indicates an increasing loss of weight with increase of pressure and speed. In other words, as these two factors increase, the wear of the shoe compared with the work done in stopping the wheel increases. On the whole, the tests indicated in the tables justify the specifications of the Association as at present in force.

#### BRAKE BEAMS.

Last year this committee recommended that a new method of procedure for testing No. 2 brake beams should be adopted to take the place of those given in the M. C. B. Proceedings for 1913, page 854. This recommendation was approved by the convention and made the subject of letter ballot. It received a

majority of the votes cast but lacked a few votes of the necessary two-thirds. The committee believes that this was due to a misapprehension and desires to state that the proposed test is no more severe than that at present in use but is much more

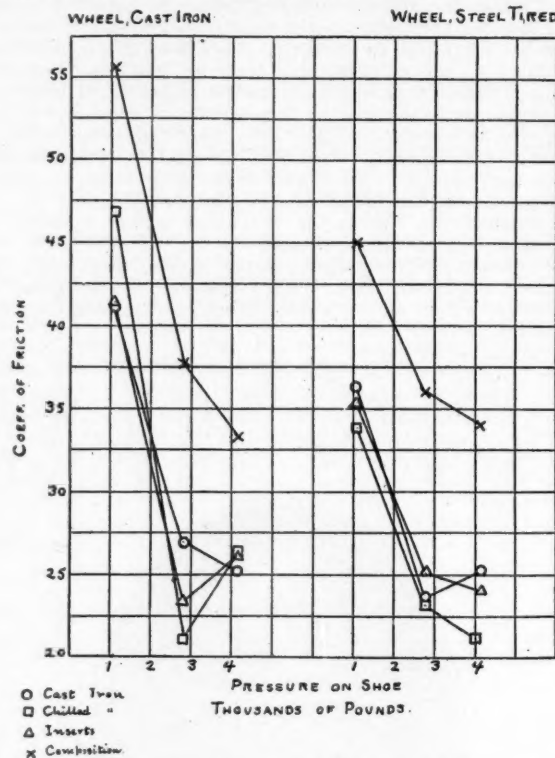


Fig. 3.—Mean Coefficient of Friction (in per cent) of Brake Shoes on Cast Iron and Steel Tired Wheels at 20 M. P. H.

in line with accepted practice in the matter of testing units and structures.

Frequent communications have come to this committee calling

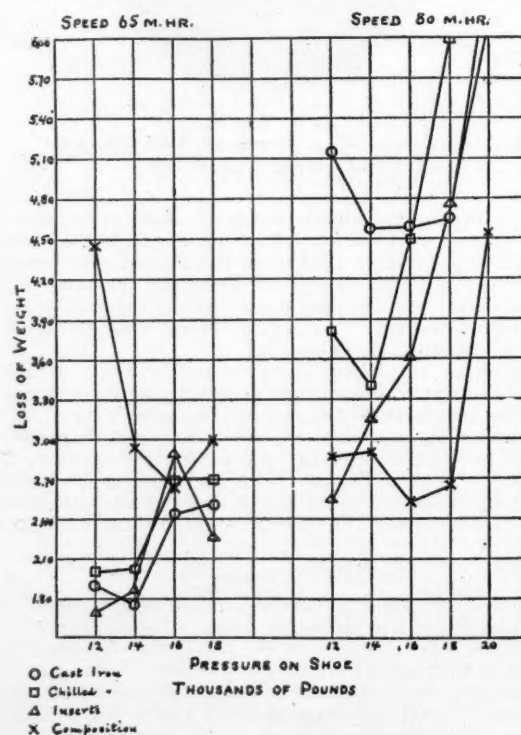


Fig. 4.—Loss of Weight of Brake Shoes (in pounds) on Steel Tired Wheels at 65 and 80 M. P. H., Respectively

attention to the fact that there should be some notation and specifications for beams heavier than the No. 2. After carefully considering these communications and the various weights of

beam in common use, the committee has decided to recommend a classification of beams heavier than No. 2 to be known as No. 3, 4, etc. To properly determine the class in which such beams belong, the committee recommends the following specifications for testing to be substituted for the specifications and tests for Nos. 1 and 2 brake beams as given in the M. C. B. Proceedings for 1913, page 854:

**Initial Load.**—Apply an initial load corresponding to the number of the beam, as in the second column of the accompanying table, then reduce to zero. Apply a load of 500 lb. and reset the deflection instrument to zero.

**Test Load.**—Apply a test load corresponding to the number of the beam, as in the second column of the accompanying table, and under this load measure the deflection, which is desired to be 1-16 in. or 0.0625, but should not exceed 0.07 in.

**Test for Set Load.**—The beam must then be loaded to the load shown in the third column of the table after which the permanent set shall not exceed 0.01 in.

**Total Deflection Test.**—The brake beam should stand a total motion of the head of the machine of not less than 2 in. without failure at any point.

Number of Beam.	Deflection Load.	Set Load.	Ratio.
1	6 500	14 000	47
2	12 000	24 000	50
3	18 000	30 000	60
4	24 000	36 000	66.7
5	30 000	42 000	71.2
6	36 000	48 000	75

It will be noted that in each case the test load corresponds with the working load of the beam and that these loads, with

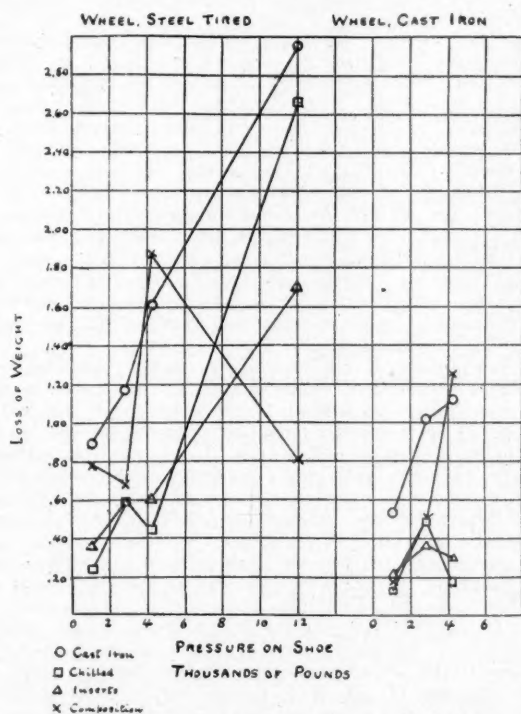


Fig. 5.—Loss of Weight of Brake Shoes (in pounds) on Steel Tired and Cast Iron Wheels at 20 M. P. H.

the exception of the No. 1 beam, vary at intervals of 6000 lb. Further, that the set load will correspond practically to the elastic limit of the material.

The last column of the table shows the ratio existing between the two loads. The proper values of the set load have been determined from experiments made at the testing laboratory of the Pennsylvania Railroad at Altoona by C. D. Young of the committee and are shown in Fig. 6.

Attention was called in the report of the committee last year to the desirability of some further specifications concerning the weight of struts and other elements of the beam. The committee at that time reported that specifying minimum weight would not solve the difficulty but that some specifications defining the sizes of the heads and struts should be determined. The committee recommends that tests be undertaken by the Association next year and would ask for instructions on this point.

The committee has received some criticism of the 500-lb. initial load in the proposed specifications, it being claimed that in the

case of light nonadjustable beams such a load might influence the acceptance or rejection of the beam. To settle this point, C. D. Young of the committee tested several beams of this character, using the 50-lb. initial load and the 500-lb. load. The results of these tests show that this criticism is unfounded.

The committee urges that a load of at least 500 lb. is necessary with the class of machines generally used for testing brake beams in order to take up the lost motion in the machine and in the beam itself and that it is so small compared with the working load of the beam as not to influence the results otherwise. The committee further recommends that in testing beams which

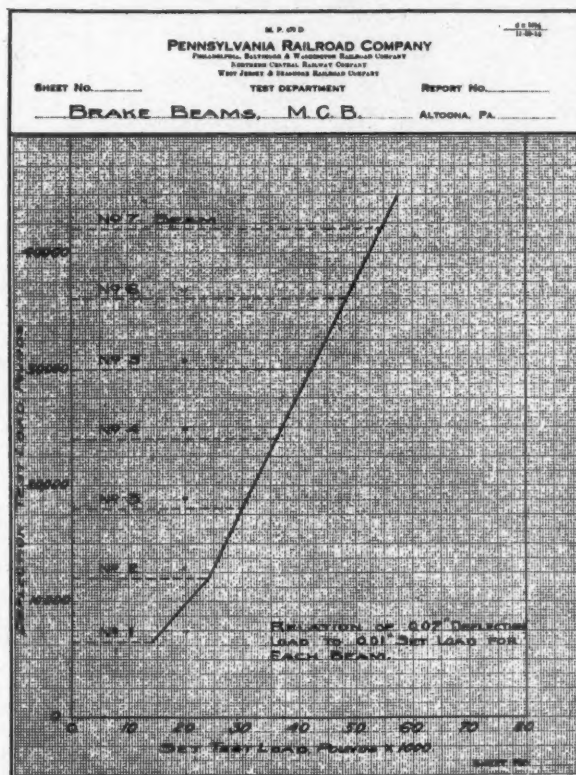


Fig. 6.—Relation of 0.07 in Deflection Load to 0.01 in Set Load for Various Size Brake Beams

have adjustable heads, the heads should be removed before the beam is tested so as to avoid unnecessary lost motion during the test.

The report is signed by:—Prof. C. H. Benjamin (Purdue Univ.), chairman; C. D. Young (Penn.); R. B. Kendig (N. Y. C.); J. F. DeVoy (C. M. & St. P.), and C. B. Young (C. B. & Q.).

#### DISCUSSION

Prof. C. H. Benjamin (Chairman): I wish to emphasize the desirability at the present time of testing brake beams with the operation of strain gage so as to determine the exact stresses present in different kinds of beams at different loads. Our test at present simply show the strength of the beam as a whole. What we desire to know is what is the strength of the units or elements of which the beam is made up, and that at the present time can be very readily done.

J. J. Tatum (B. & O.): If a minimum weight is not set for a brake beam, how long can we expect a brake beam that gives the test required when new, to maintain the required strength in service? These beams due to deterioration result in a sectional area of metal vastly reducing. The question is: Are we going to have a brake beam in service a justifiable length of time in accordance with its cost, if we do not apply a minimum weight? Just recently I have checked a number of beams and find beams of the same manufacturer, the same style, materially reduced in sectional area. That beam when tested new will give the desired results but after having been in service, due to deterioration we have not gotten the results required by the test. How is that going to be taken care of?

C. D. Young (Penna.): I think that is largely a question of the manufacturer making the beam to meet the test at the time the test is made; when he reduces the section he raises the carbon in the tension member to meet the test. I believe, however, that the committee should have more information than

they have at the present time before they could establish a minimum weight of beam. The committee has through its recommendations, offered to the association at two different times what they consider to be a satisfactory No. 2 beam, and on letter ballot that beam has been rejected by the association, although the committee has not been able to get any definite information from those voting against the beam why they voted unfavorably to it. The beam is probably heavier than the majority of the No. 2 brake beams which are purchased in the market today as No. 2 brake beams. The committee felt that there should be some factor of safety above that required in the test when new. If we were to establish a minimum weight with the information which we now have available, I am afraid that the weight would be so high that the members, in view of what they are purchasing, would not adopt it as recommended practice for the association. If we have a test or an investigation of this kind made we may be able to develop from that data a construction which will permit a beam that will meet specifications during a large portion of its life, and at a weight which is somewhere comparable with the present weight which we are buying in No. 2 brake beams. I believe it was the intention that this investigation cover a No. 2 brake beam only. We would be spending a lot of time on useless work to investigate the No. 1 beam, since so few of those beams are coming into use due to the requirement of the No. 2 beam on a 32,000 lb. light weight car.

J. J. Tatum: I hope every railroad considering this matter will give thorough attention to the required minimum sectional area and weight, so that when we do establish a brake beam we will have one which will stay in service a little while. Further, I would rather see one beam and not two beams. If we are going to have a standard coupler, why not have one standard brake beam so that we can repair anybody's car with the brake beams we have in stock?

D. R. MacBain: I have taken a great deal of interest in the report brought in by the committee on this very important subject, but I feel that the matter is not as well canvassed as it ought to be at the present time for the association to arrive at any definite conclusions as to what ought to constitute a brake beam in its entirety. A few months ago Mr. Chidley and I, being pressed from all official quarters on account of derailments we were having on our line, and other troubles caused by brake beams dropping down, etc., went out and spent a day in one of the important yards and noted incoming trains and outgoing trains. The result of our day's study of the situation was that ninety-five per cent of our brake beam trouble was in the brake shoe and in the brake head and the hanger. The situation seems to me to be more one of brake heads, brake shoes and brake hangers at the present time than anything else. We found that the loop hanger brake head was a very fruitful source of failure. We found that the cast iron brake shoe breaks off, leaving probably half a shoe on, and that on the next application of the brake out on a division the brake head is worn off on the toe. When the train gets in, probably the brake shoe is discovered by the switchman or inspector and replaced. A cast iron shoe put on such a head will usually break and go off altogether, and then the brake head wears down on the center or the loop that the pin goes through. The next time a new shoe is applied it promptly breaks in the middle. The loop hanger brake head is not strong enough. The loop hanger brake head breaks through the back, probably will not be noticed by the car inspector in making the ordinary inspection the car then goes through the yard and out on the division, and finally, under a severe application of the brake, will give way, causing a derailment or some lesser trouble. The next point is the brake shoe itself. This Association should go on record to the management of the railroads for a brake shoe which will not break under any of these slight disadvantages but will yield slightly to resist unequal pressure. Following this investigation, we issued instructions to all the important yards requiring the master car builders to send special men along with the inspectors to examine the trucks in every instance where we could do it without delaying an important train. If there was defective equipment on the brake rigging it was corrected. The result is that we have a miscellaneous assortment of brake heads, brake hangers, pins, etc., amounting to between 60 and 90 tons, taken off at three prominent yards on the New York Central, west of Buffalo. I wish to appeal to the members of this association to do something toward the end that after a while we may get out of service the thousands of defective heads, defective hangers and defective pins that are now causing the real trouble.

Prof. L. E. Endsley: I have tested in the last few years several brake beams with a Berry strain gage, and any beam that will stand the recommended specifications will not have

the compression of tension members over-strained. The fact has been that a great many very light heads have been made in order to make the beam stand up under the specifications. Neither the strut nor the head will show any appreciable amount of stress when tested. The stress which comes on the head is due to something else. This association should make a minimum weight of head so that it will not break when a little extra strain is put on it, but as far as the tension and compression member is concerned there are thousands of beams that have plenty of metal in them to stand all the stress if the head remains in its designed position. The strut is another thing which, while not showing stress under the Berry strain gage, is often broken due to hanging the brake wrong or to the stress coming on at an angle rather than in the way it was designed, because of the brake shoe getting worn at one end. A special study of tests for the head of the brake beam is a very important thing for the association to take up.

J. J. Tatum: We have for the last three or four years very materially increased the sizes of our brake hangers and the brake heads have been improved. We find the same condition with reference to the struts and are now attending to the weaknesses that have developed in the tension and compression members.

H. C. Manchester (D. L. & W.): We are having with very undesirable frequency the dropping of brake beams, largely due to the hangers coming out of the recesses in the heads. These cause in many cases quite serious wrecks, and ordinarily more or less interference with the traffic. I come here with an urgent request from the management of the Lackawanna for this body to do everything possible to bring about an improvement in the design of brake hangers. I have written a letter to the Secretary containing recommendations and enclosing a blueprint showing a design of an improved head and hanger to meet this condition, from which we are having a hundred brake beams made. This is the worst small thing that we have to contend with every day in the year.

J. J. Hennessey: If there is one thing that the railroads need more than anything else at the present time it is a standard brake beam. I do not mean just one design, but a brake beam on which the heads and struts can be interchanged, so that you can remove one beam and put on another without changing the length of the brake rods. The difficulties that we are all complaining of arises because we have got too many different styles of hangers, too many different styles of brake beams, too many different styles of connections and fasteners.

Prof. Benjamin: Today we have certain methods of determining whether the brake beam as a whole is strong enough to do the work that is required of it, but we have no means of determining whether the individual elements are properly designed. All that the committee desires is permission to make such tests on beams which are now acceptable to the Association and are in use. No. 2 beams—as shall determine the stresses which come on the various elements of the beam. We will then be able to frame specifications which would meet the points here raised. In regard to the question of brake shoes we have found that those which were cracked sometimes gave better results than those which were whole. If you see fit to adopt a cast iron shoe with reinforced back, you will frequently get better results from your brake shoe after it is broken than before.

H. H. Harvey (C. B. & Q.): Where you have one case of beam trouble you have ten cases of brake hanger or brake hanger pin trouble. You may not believe that, but go out in the field and look it up and you will find that it is true. This Association cannot do any greater work this year than to do something on the whole brake matter.

C. D. Young: I am glad to hear the association talk the way they are this morning. About ten years ago I was on the brake beam committee. We recommended a standard brake beam and when it came before the association it was split up into all its parts. The members went back home and defeated what the committee had done at that time in attempting to make a standard brake beam, and got two or three standards. We have been sleeping at the switch long enough. We go to a great deal of pains to take care of our passenger car brake beams and break heads so they will be safe. These are also the cars that we pay most attention to in the matter of inspection.

When it comes to freight equipment which runs all over the United States and is inspected indifferently wherever it goes, we put on the poorest kind of equipment. The argument presented at the time I refer to was the fact that we had so many cars in service that to go to a standard brake beam would involve a lot of expense. I imagine we have spent more in the matter of wrecks and damages, thousands of times over, than it would have cost us to go a standard

brake beam at that time, and one that would have given us at least less than 15 per cent of the wrecks on our railroads.

F. W. Brazier: On our equipment we put a safety strap under everything, and that safety strap is strong enough so that if our hangers break, it will prevent the beam from going down and coming in contact with the rail.

Prof. Benjamin: The committee is perfectly willing to undertake the consideration of the method of holding the brake beam if the association tells us it is a part of our business, but heretofore we have not held that it was our right to meddle, in that it belonged to another committee.

H. C. Manchester: There are a lot of good brake beams on the market now if there was something to hold them up. That is what we do not have. I do not think we ought to spend any money on something to catch a beam, but the money should be spent on something to hold the beam up.

E. T. Millar (B. & M.): Too little attention is paid to the material that is put in the hanger. If we had some specifications for this material, it would enable us to get a material which would not crack at the corners where it is bent, and where it is practically impossible for the inspectors to see. I know of a number of cases where accidents and serious derailments involving a great deal of expense have occurred, due to a concealed crack in the corner of the loop hanger. There are a number of heads failing at the back part, on the inside, another place where, by ordinary inspection with the limited time that an inspector has to look over the train, it is practically impossible to detect the failure. Why should we not have the specifications for the head and the hanger?

F. F. Gaines: We have been riveting angle irons on the bottom of our shoes. We have not had a single case where they have come down and caused any trouble. It is not expensive; you can pick up old angle irons and T-irons and rivet them on, and they make a good job.

M. K. Barnum: The suggestion that we have one standard brake beam is entitled to very careful consideration. The difference between the two present standard beams is not very great and it is assumed that the requirements for the present standard beam are such as to allow for corrosion and deterioration of strength by natural wear. It may not be necessary to have a standard minimum weight adopted, but in looking over a great many second-hand brake beams I have been very much impressed with the amount of deterioration. I have seen a great many that I am sure were not one-half as strong as they were when new. If there is any doubt on the part of the committee as to their functions I would suggest that they be requested to cover the whole subject of the brake beam and its accessories.

O. D. Buzzell (A. T. & S. F.): I believe that most of our troubles can be eliminated by changing our hangers and enlarging them. Our brake heads in many cases are also weak and should be strengthened. I have occasion to see and examine a great many brake beam failures, and I assure you that trouble is with the hangers and heads, more than with the brake beams.

C. E. Chambers (C. of N. J.): I want to voice my approval of the safety hanger. That is recommended practice, but a great many roads do not pretend to apply them. The Central Railroad of New Jersey is doing so. With a good safety hanger a great many derailments would be averted after the hanger is broken.

C. D. Young: I have listened to this discussion with pleasure because it confirms what the committee has been saying for about five years at each convention. The reason they did not say it so specifically this year is because they have been so generously turned down on the letter ballot. We have proposed a standard brake beam for recommended practice only, and when the question has been presented to letter ballot, if practically any member, who has stood on his feet here and advocated its adoption, had voted for it, it would have resulted in its adoption as recommended practice, the vote was so close.

In last year's committee report we pointed out that about 75 per cent of the defective brake beams found on their roads were removed on account of worn brake heads, indicating that if beams were properly hung and the locations for hanger holes and hanger brackets were standardized a large number of failures could be prevented. Failure of the compression and tension members is further shown to be due largely to poor fits between the heads and struts and the other members. In other words, it is apparent that a more careful standardization of brake beams would result in a much smaller percentage of failures and much less expense to the railway companies. That is practically what has been said this morning. We said this last year, as the final word, coming at the end of the report, and we hoped that when the question went to letter ballot as the No. 2 brake beam

was then offered by the committee, as shown on sheet 17-B of the committee's report, there would be enough members who would place in service the beam reported as recommended practice design, so that we could get some experience. However, nothing was done.

A. R. Ayers (N. Y. C.): If the head continually wears on account of the shoe losing off; if the shoe loses off because it is a plain cast iron shoe, it would seem that some action should be taken to discontinue the use of plain cast iron shoes, which will fall off the heads if they crack; and they are pretty sure to crack. If the cast iron shoe gets heated it will warp so that it does not conform to the curvature of the wheel, taking a smaller radius than the curvature of the wheel, so that if pressure is applied to the brake shoe at the center it will crack. On the other hand, it may be that the lugs on the shoe which engage the head, and are keyed there, are twisted out of place; they are not very deep. I have seen among the brake shoes shown on the pier at these conventions shoes where the lug on the shoe, designed to keep the shoe parallel with the head, did not engage it fully. The only thing which kept the shoe on the head was the pressure of the flanges of the wheel. There was 1-16 in. clearance between the toes of the head at each end. The entire design was made with the idea that it shall be an easy matter to take off the old shoe and put on a new one, and it follows that it is a comparatively easy matter for the shoe to work off itself. It would seem that the present brake shoe design is of sufficient age to warrant a little investigation as to the possibility of making improvements.

With respect to the design of head submitted for recommended practice, by simply having the bottom lug on that head so that it stands back a little further, the head can be increased thirty per cent in strength. I believe that the committee should give special attention to the fastening of the shoe to the head and small details which have been standard practice for a number of years and which according to present indications require some revision.

H. C. Manchester (D., L. & W.): I move that the matter of improved brake hangers be made a part of the work of the Brake Beam Committee, or that a special committee be appointed to investigate and report on brake hangers.

The President: The Association has a special committee on car trucks. Is there any objection to having that committee study the brake beam?

H. C. Manchester: No, I just want to have some committee study the design of the brake hanger.

A. R. Ayers: I would like to suggest that the Car Truck Committee can take care of almost any modification of the upper end of the hanger that is desired, but the most difficult end of the hanger to take care of is that at the brake head. I move that the question of a proper brake hanger be referred to the Brake Beam Committee, because it would not be possible to do much with the hanger without encroaching on the work of the Brake Beam Committee.

The President: Would not the Brake Beam Committee be under the same difficulty as regards fixing the top of the hanger? Perhaps it would be well to refer it to those committees jointly.

A. R. Ayers: I believe the two committees would have no difficulty in taking care of anything necessary.

O. C. Cromwell (B. & O.): I believe most of the trouble with the brake beams is the question of suspension, and I suggest that the committee give some attention to the third point of suspension. I think it is important to keep the shoe parallel to the tread of the wheel and to give that proper consideration will, in my opinion, eliminate some of the troubles. We avoided many failures in connection with third suspension, and we also got after the brake beam hanger, particularly with respect to its attachment to the column. We resorted to the use of a threaded bolt with a cotter in addition, and in addition to that we made our hangers  $\frac{7}{8}$  in. in diameter, and give a good lateral fillet between the horizontal and vertical members of the lug. We have little trouble from cracking in the corners when this arrangement is used. I think the question of the third suspension of the brake hanger is important, so as to keep the shoe parallel with the head.

T. H. Goodnow: I endorse the point Mr. Ayers brought out as to getting a bearing of the lug where it fits into the recess of the head. Some years ago we had considerable trouble on the Lake Shore with broken brake heads in passenger service, and that trouble was cured by changing the lug and filling up the recess, so we did not get any spring in the head when the brakes were applied.

With respect to the inspection of the brake beams to determine whether the proper beam is on the car, most roads feel that the car inspector can do that. I, for one, do not believe he can, considering the way the beams are marked at the present time. The inside hung beam is prac-

tically the common standard now with one or two beams, and if we increase to six beams, as this report would indicate, the car owner is going to protect his car by having his inspectors find out what kind of a beam is on the car; and at night, with an inside hung brake, and with the marking on the fulcrum or strut, it cannot be done. The marking must be on the outside, where it can be seen in the ordinary construction of the car.

D. R. MacBain: I move that this matter be referred to the incoming Executive Committee for consideration and action.

F. F. Gaines: I wish to ask a question about having only two beams.

T. H. Goodnow: The committee recommends six beams. The President: Your idea is also to refer that point to the Executive Committee?

D. R. MacBain: Yes.

The President: Doctor Benjamin, is it your idea that the change on page 16, with regard to specifications, be referred to letter ballot?

Professor Benjamin: Yes.

(The motion made by Mr. MacBain was seconded, put to vote and carried.)

E. W. Pratt: How does the matter stand as to the committee's recommendation regarding the use of strain gage? Is that to be handled by the Executive Committee?

The President: Yes.

### CAR WHEELS

This report is largely in the nature of a progress report, as it has been impossible to complete in time for this report various investigations of wheel design that are now under way. A circular of inquiry was sent out by this committee, requesting the members to furnish full information in regard to broken wheels. A total of 33 railroads and one private car line, all members of this Association replied, the companies in question representing an ownership of 1,297,909 cars. While some few replies were received promptly, the majority were so late in coming in as to preclude the possibility of completing an investigation and arriving at joint conclusion with the committee of the American Railway Engineering Association in time for this report.

Three tabulations of the reports received, covering cast-iron



W. C. A. Henry  
Chairman, Committee on Car Wheels

wheels having broken and cracked plates, have been prepared, as follows:

Table I.—This tabulation shows the number of wheels having cracked and broken plates, of 625, 675 and 725 lb. weight, respectively, and separated as between refrigerator, box and all other cars.

Table II.—This tabulation shows the number of wheels of each of the three different weights, separated as between refrigerator, box and all other classes of equipment, and grouped by gross weights of car and lading.

These tabulations present one very striking feature, namely, the high percentage of wheels removed from refrigerator cars. By referring to Fig. 1 it will be seen that of 904 625-lb. M. C. B. wheels reported as being cracked and broken in the plate, 575, or 63.6 per cent., were under refrigerator cars. There is no question but that the failure of wheels under this class of equipment

is out of all proportion to the number of cars. Attention is called to the large number of 625-lb. wheels that failed under refrigerator cars of a gross weight of 105,000 lb. or more, which weight is considerably in excess of that supposed to be carried by these wheels. It is not believed, however, that this overloading will entirely explain the situation.

According to present M. C. B. practice, cars are braked to 60 per cent. of their light weight, based upon 50 lb. pressure. The result of this condition is that a refrigerator car of 60,000 lb. capacity, weighing 44,000 lb., equipped with wheels of 625 lb. weight, will have a braking power, in many instances, equal to

WEIGHT OF WHEEL	NUMBER OF PLATES.								TOTAL.			
	CRACKED.				BROKEN.							
	Refr.	Box.	All Other.	Total.	Refr.	Box.	All Other.	Total.	Refr.	Box.	All Other.	Total.
625.....	556	236	72	864	19	14	7	40	575	250	79	904
675.....	33	414	199	646	.....	4	1	5	33	418	200	651
725.....	3	118	517	638	.....	6	8	9	3	124	520	647

Table I.—Number of Wheels Having Cracked and Broken Plates Reported

or greater than a car of 100,000 lb. capacity weighing 40,000 lb. and equipped with 725-lb. wheels. For example: Take the two cases just cited; the refrigerator car will have a gross weight of 110,000 lb., with a brake pressure of 26,400 lb., which is 60 per cent. of the light weight and 24 per cent. of the loaded weight. The other car will have a brake pressure of 24,000 lb., which is also 60 per cent. of the light weight of the car, and but 16 per cent. of the loaded weight, and which at the same time is 2400 lb. less than the brake pressure of the 60,000 lb. capacity refrigerator car.

If it is true that heating due to the action of the brakes is

GROSS WEIGHT OF CAR	WEIGHT OF WHEEL											
	625				675				725			
	Refr.	Box.	All Other.	Total.	Refr.	Box.	All Other.	Total.	Refr.	Box.	All Other.	Total.
90 000 and under	6	1	11	18	2	2	2	6	1	1	1	3
Over 90 000 to 95 000	12	11	12	35	2	2	2	6	1	1	1	3
Over 95 000 to 100 000	7	97	23	127	1	3	4	8	1	1	1	3
Over 100 000 to 105 000	10	75	11	96	1	1	1	3	1	1	1	3
Over 105 000 to 110 000	123	31	1	155	6	2	1	9	1	1	1	3
Over 110 000 to 115 000	336	15	1	351	12	1	1	14	1	1	1	3
Over 115 000 to 120 000	21	4	3	28	1	2	8	11	1	1	1	3
Over 120 000 to 125 000	2	2	2	6	2	73	40	115	1	1	1	3
Over 125 000 to 130 000	1	3	3	7	1	268	46	315	1	1	1	3
Over 130 000 to 135 000	1	1	2	4	33	64	97	194	1	1	1	3
Over 135 000 to 140 000	1	1	1	3	6	21	11	38	1	1	1	3
Over 140 000 to 145 000	1	1	1	3	1	8	9	18	1	1	1	3
Over 145 000 to 150 000	1	1	1	3	3	3	3	9	1	1	1	3
Over 150 000 to 155 000	1	1	1	3	2	2	2	6	1	1	1	3
Over 155 000 to 160 000	1	1	1	3	1	1	1	3	1	1	1	3
Over 160 000 to 165 000	1	1	1	3	1	1	1	3	1	1	1	3
Over 165 000 to 170 000	1	1	1	3	1	1	1	3	1	1	1	3
Over 170 000 to 175 000	1	1	1	3	1	1	1	3	1	1	1	3
Over 175 000	1	1	1	3	1	1	1	3	1	1	1	3
Unknown	57	13	15	85	2	7	22	31	3	7	10	20

Table II.—Tabulation of Wheels Having Cracked and Broken Plates Reported

largely responsible for this trouble, it is only to be expected that under this condition the number of failures of 625-lb. wheels under this class of equipment is going to be large.

Attention of the Association is again called to recommendations made in previous reports, that wheels of the proper size be used, especially under refrigerator-car equipment, as at the present time many cars are running with lighter wheels than are proper, in accordance with the standards of this association.

The report is signed by:—W. C. A. Henry (Penn.), chairman; A. E. Manchester (C., M. & St. P.); R. W. Burnett (C. P. R.); R. L. Ettinger (So. Ry.); O. C. Cromwell (B. & O.), and J. A. Pilcher (N. & W.).

As there was no discussion, the report was received, will be printed, and the secretary will arrange for making the curves as suggested by the committee.

The meeting then adjourned.

### REVISION OF THE RULES OF INTERCHANGE

During the last few years there has been quite an undercurrent of feeling that the rules should not be revised so often, that their period of effectiveness should extend over a longer period of time. The St. Louis Ry. Club recommends that no changes be made in the rules, and the Chief Joint Interchange Inspectors at a recent meeting took similar action, and, to a certain extent, the committee coincides with this feeling. While Rule 124 provides that the Arbitration Committee shall ask for suggestions of changes, amendments and additions to these rules prior to each convention, the fact that so many interpretations had been rendered, and the feeling of letting the rules alone for a year or two, led the committee to refrain from asking

for such suggestions this year. Naturally enough, in any set of rules some changes are necessary to conform with changed conditions, and during the year a good many suggestions have been received, which have been incorporated in this report, with the recommendations of the committee. Your committee would recommend that in so far as the interpretations rendered during the year are concerned, they be not incorporated in the body of the rule, but that they be printed on the opposite page in the rule book to the rule itself. It is thought that the rules and the interpretations are now thoroughly understood, and their incorporation into the rules may lead to further misunderstandings, which may be avoided by keeping them separate.

[Following are the more important suggested changes in the rules.—EDITOR.]

**Rule 1.**—It must be understood that Rule 1, as written to-day, simply calls to the attention of handling companies that the details of repairs to foreign cars on their lines should be maintained in the same general condition as it maintains its own cars, whether the defects are billable against the owner or not.

**Rule 2.**—To conform to A. R. A. Car Service Rule 15a, the committee would recommend the following:

**Rule 2 F.**—The following defects must be repaired while car is under load:

1. Defective wheels and axles under all cars.
2. All other truck defects on home cars.
3. All other truck defects on foreign cars, except metal bolsters, metal truck sides and metal spring planks; also excepting



**J. J. Hennessey**  
Chairman, Committee on Arbitration

non-M. C. B. standard journal boxes and contained parts in cases where the M. C. B. standard is not a proper substitute.

4. Defective outside wooden end sills on all cars.
5. Defective body center plate or body center-plate bolts, except where such center plate is cast integral on bolster of home cars.
6. Renewal of roof boards of outside wooden roofs, and of inside metal roofs, where such renewal does not exceed 25 per cent. of the roof boards, and where purlines, rafters, ridge pole, side and end plates are in good condition, on all cars.
7. Side doors, where lading is properly loaded as required by the Loading Rules, on all cars.
8. Missing or defective side doors where requiring no protection; end doors, roof doors and hatch covers, on all cars.

F. C. Schultz suggests adding to the last three paragraphs of this rule, after the word "carded," the words "on both sides of car." The committee approved of this suggestion.

**Rule 3.**—The committee recommends that section (d) be divided into two paragraphs, as follows:

Cars built after October 1, 1915, with axles other than M. C. B. standard, will not be accepted in interchange.

Cars built after October 1, 1916, with journal bearings other than M. C. B. standard, will not be accepted in interchange.

The committee proposes the appointment of a special committee to consider a redesign of the M. C. B. journal bearings and wedges, with the view that the bearings and wedges, as finally redesigned, may be used without conflicting with any patented devices.

The Chicago Car Formen's Assn. suggests advancing the date of effectiveness to October 1, 1916. The committee approves of this suggestion.

**Rule 8.**—The Central Railway Club and the Railway Club of Pittsburgh suggest that this rule be changed to read:

"Billing repair card shall be made in duplicate, the original to be known as the billing repair card and the duplicate to be known as the record repair card, and to be of the form shown on pages 107, 108, 109 and 110, all items of repairs to be in handwriting."

"Note.—Use of present forms, if not conforming to recommended forms, may be continued until stock is exhausted."

Wording of rule to cover a new form which has been recommended for a wheel and axle billing repair card (copy shown herewith), which form should be shown on pages 109 and 110.

The committee approves of this suggestion.

**Rule 21.**—The Pittsburgh and Central Railway Clubs suggest adding the following in Section (a), after the word "roof" in last line, changing the period to semicolon:

"or for the cost of applying temporary hand-railings to, or boarding over the opening on, empty well-hole cars."

The committee approves of this suggestion.

**Rule 30.**—Rule 30 will be revised to correspond with the revision adopted by the American Railway Association.

**Rule 33.**—The Pittsburgh Railway Club, Central Railway Club and Niagara Frontier Carmen's Association suggest that rule be removed from bracket and changed to read:

"Owners will not be responsible for the expense of repairing or replacing ladders, handholds, sill steps, brake shafts, brake wheels, ratchet wheels, brake pawls, ratchet and pawl plates, upper brake-shaft bracket, brake-step board and brackets, brake-shaft casting where same is used to secure brake shaft to roof of car, brake-chain bolt when in connection with repairs to brake shaft; also, any bolts, rivets, nuts or keys used in securing the above parts, whether or not in connection with other repairs."

For the reason that the rule has been revised to include all of the detail parts that have been included in the Arbitration Committee's interpretation of this rule in Circular No. 9, and will avoid any future misunderstanding of the rule.

The Arbitration Committee reconsiders its suggestion in Circular No. 9, with reference to the elimination of prices for straightening handholds, sill steps, brake shafts, etc., and would recommend that these items be retained for uniformity in charges in cases of cars damaged at industries located on handling line, cars loaded up and shipped home, or cars damaged on the handling road by the crew of another road.

**Rule 40.**—The committee recommends the elimination of this rule.

**Rule 42.**—The committee recommends that the first paragraph of the note following this rule remain as at present; that the second paragraph be eliminated and the following substituted:

"In the case of four or more longitudinal sills requiring renewal or splicing, if the repairs of each of such sills are due

#### M. C. B. ASSOCIATION—BILLING REPAIR CARD—(Wheels and Axles).

WHEELS AND AXLE REMOVED										WHEELS AND AXLE APPLIED					
Maker	Ry. Co.'s Initial on Wheel	Wheel No.	Service Metal	Before Turning	After Turning	Cause of Removal	Maker	Ry. Co.'s Initial on Wheel	Wheel No.	Service Metal	How at Hand	Not Charge	To Be Returned To No.		
Axle							Axle								
Location		Size and Kind of Wheel Removed and Applied		Size of Journals Removed and Applied			Location		Size and Kind of Wheel Removed and Applied		Size of Journals Removed and Applied				
Date _____ 1915							Date _____ 1915								
Car No. _____							Car No. _____								
Inspected at _____							Inspected at _____								
Inspector _____							Inspector _____								

#### New Form for Billing Repairs to Wheels and Axles. A Duplicate to be Used Entitled "Record Repair Card" and to be Retained by Party Making Repairs

to decay or elongated bolt holes, the car shall be held and joint-inspection statement forwarded to owner, who shall promptly authorize repairs at his expense, or destruction of car. In this case, any sill decayed and cracked, or decayed and broken, must be considered as a broken sill."

**Rule 52.**—The committee suggests the following additional sentence be added: "The use of drive screws is not permissible."

**Rule 54.**—The committee recommends the removal of this rule from the bracket, and change to read: "Car owners are not responsible for damage to any part of the brake apparatus caused by unfair usage, derailment or accident that requires repairs or renewal."

**Rule 60.**—The Pittsburgh Railway Club and the Central Rail-

way Club suggest that, following the word "tested" in second line, the addition of "Or dirt collectors not cleaned."

The committee approves this suggestion.

**Rule 68.**—The committee recommends that the rule read: "Flat sliding; cast iron, cast steel, wrought steel or steel-tired wheels; if the spot is  $2\frac{1}{2}$  in. or over in length, or if there are two or more adjoining spots, each 2 in. or over in length, the same responsibility to apply to mate wheel, regardless of length of slid spot."

"A separate defect card to be furnished in the case of wrought-steel or steel-tired wheels."

**Rule 88.**—F. H. Clark suggests that the repair card be changed so that repairing road will be required to designate on repair card the repairs they have made, and whether any of the repairs made were wrong repairs and whether or not defect card was attached to car for such wrong repairs.

The committee does not approve of the suggestion stating that if the spirit of Rule 88 were following out this matter will be taken care of. There is no more guarantee that the parts repaired will be noted on the repair card than the present rule provides.

**Rule 94.**—The committee recommends an addition to this rule as follows: "except as follows: In the case of repairs covered by defect card, if the owner changes the original standard of parts so involved, the charge must be no greater than if original design had been followed."

"If owner elects to dismantle the body or trucks, or both, charge may be made for such material as would have been required for the repairs covered by the defect card, but no labor shall be charged in such case, except in so far as labor is already included in M. C. B. prices for material."

**Rule 95.**—The committee recommends that the paragraph read: "Couplers, including yokes, springs, followers, and friction draft gears complete, when lost with the coupler."

**Rule 96.**—The Pittsburgh and Central Railway Clubs suggest the following: Eliminate second paragraph of this rule and, also, the form shown on page 109, as this form is not generally used and is not desirable, for the reason that all necessary information in connection with renewal of wheels and axles should be shown on a special billing repair card for wheels and axles, which is recommended and covered by proper reference in proposed revision of Rule 8.

The committee approves of the suggestion.

**Rule 99.**—The committee recommends an addition to this rule reading:

"When axle is removed on account of owner's defects on wheel, and the journal has increased in length more than  $\frac{3}{8}$  in., or the collar is worn to less than 5-16 in., or the diameter of the journal is not at least  $\frac{1}{8}$  in. greater than the limiting diameters given in Rule 86, the axle shall be considered as scrap and credit allowed accordingly."

**Rule 108.**—The committee recommends the following change in this rule:

"No labor to be charged for the inspection of cars, testing or adjusting of angle cocks or tightening unions."

"No charge to be made for the material or labor of lubrication."

**Rule 120.**—The committee recommends that the rule be changed to read:

"Where the labor cost of repairs exceeds 10 per cent. of the base price of car body, as given in Rule 116, such car shall be jointly inspected by handling line and a representative of car owner or of a disinterested line (whichever can be most conveniently obtained), and form furnished as shown on page 105, showing all defects found on car and an estimated total cost of the repairs. Upon receipt of this information, owner must either authorize destruction or repairs. In the latter case owner must forward to handling company necessary plans and specifications for such repairs."

"If owner authorizes destruction, handling line shall allow credit for all material at M. C. B. scrap prices, less labor cost of destruction."

"The base price of car body under Rule 116, as referred to above, not to include value of air brakes, or other additions for special items as referred to in Rule 116."

**Rule 122.**—The Pittsburgh and the Central Railway Clubs suggest the following: Add an additional sentence after the word "line" in the last line, as follows:

"A separate bill, with copy of freight or express bill attached, should be rendered for the freight or express charges, showing reference to bill covering repairs."

The committee approves this suggestion.

#### PASSENGER CAR RULES

**Rule 4.**—The Canadian Railway Club suggests a new paragraph reading:

"Billing repair cards shall be furnished in all cases where repairs have been made."

The committee approves of this suggestion.

**Rule 10.**—The Pittsburgh and the Central Railway Clubs suggest that in paragraph (a), after the word "inches," in third line from bottom, add the words, "or having seamy journals, fillets in back shoulder worn out, the length of journal increased  $\frac{1}{2}$  in. over standard length, or collars broken off or worn to  $\frac{1}{4}$  in. or less under fair usage."

The committee approves of this suggestion.

The report is signed by:—Jos. W. Taylor, secretary.

#### DISCUSSION.

The Secretary: At the meeting of the Arbitration Committee last evening they received a communication from the American Railway Association requesting that the light weight be marked in tank cars. It is therefore recommended that Rule 3 be changed as follows:

**Rule 3.**—Add a new section, Section O, reading as follows:

"After October 1, 1917, tank cars not stencilled with light weight and capacity in pounds, will not be accepted in interchange."

**Rule 86,** page 48, first paragraph after the tables: Omit the words "except tank cars," in the first line. Also add at the end of the rule a note reading as follows: "Attention is called to Section O of Rule 3, regarding limit of time for light weights and capacity on tank cars."

Another communication has been received from the American Railway Association in the form of a resolution adopted by the Committee on Relations between Railroads, at its meeting held in Chicago on April 12, which reads as follows:

"Resolved, that the Master Car Builders' Association be advised that the National Railways of Mexico (including the Mexican Central Railway and the Mexican International Railroad) have been suspended from the Per Diem Rules Agreement and that this suspension has resulted in making the delivering road responsible for the per diem accruing on the cars while on the National Railways of Mexico, and that it be suggested that the Master Car Builders' Association investigate the situation and take such action as is necessary to protect the owners of the cars delivered to the National Railways of Mexico."

Recommendation is made that an addition be added to rule 113 as follows:

**Rule 113.**—Add: "When a car owned or controlled by a railway company is damaged or destroyed on the tracks of a road which is not member of the per diem rules agreement of the American Railway Association, the road responsible for the per diem while in possession of the non-subscriber shall be responsible to the owners for the damage or destruction."

John S. Lentz (L. V.): I move that the report of the Arbitration Committee be accepted and their recommendations approved.

M. K. Barnum: I second the motion.

R. L. Kleine, (Penna.): There are discrepancies in the Arbitration Committee's report as compared with the report of the Committee on Prices, and before that motion is put I believe that part ought to be cleared up.

J. J. Hennessey, (Chairman): For the last several years where there was a discrepancy in prices between the Arbitration and the Price Committees, it has always been understood that the recommendation of the Price Committee prevails.

Mr. Kleine: According to one of the decisions, the Arbitration Committee does not prohibit the welding of arch bars on cars in interchange, claiming that they do not have sufficient information as to the accidents involved. I might say that it is absolutely dangerous to weld arch bars. It has been prohibited by nearly all the roads. I would like to see that provision cut out.

Mr. Hennessey: The welding of arch bars has been allowed by the rules for a great many years. We have added onto the rules this year, as you will note, a great deal of repairs that can be made without transfer of loads. While I agree with Mr. Kleine that an arch bar may be poorly welded, I will say that an arch bar properly welded is not dangerous. I believe it would be perfectly safe to allow the rules to remain as they have been for that great number of years, and not tie up cars at isolated points.

Mr. Kleine: Mr. Hennessey is incorrect in the statement that the M. C. B. Rules of Interchange have ever permitted the welding of arch bars. I would refer him to Rule 107. That does not mean the welding of arch bars, Mr. Hennessey. It has never meant that. It means the straightening of arch bars. I say it is an absolutely dangerous practice, and I have a list of cars here that have had arch bars welded and that have caused accidents. I move that that particular reference be omitted.

A. La Mar (Penn.): I second the motion.

Mr. Hennessey: I will have to disagree with Mr. Kleine,

with all due respect to the attention he has paid. The rules have allowed welding of arch bars for I don't know how many years.

F. W. Brazier: If we are going to cut out arch bars, we will have to cut out truss rods, tie rods, and everything else. I think that the rule as it is running is all right, and the Arbitration Committee felt that way and they wanted to help out the old equipment.

Mr. Kleine: We have had wrecks on that account. We have absolutely issued instructions against this practice years back, and so have other railroads, and I do not think it is a parallel case to bring up at this time the welding of a truss rod as compared with an arch bar.

Mr. Hennessey: Don't forget this thing. The traffic department is insistent on the moving of freight, and you are going to put a terrible block in the quick moving of freight at outlying points.

G. W. Wildin (N. Y., N. H. & H.): I agree with Mr. Hennessey that a properly welded arch bar is all right, but if he is doing this in the interest of the little small outlying points, he is going to get a large car welded improperly; and I say Mr. Kleine's contention is all right on the lines of safety.

M. K. Barnum (B. & O.): I would like to ask Mr. Kleine if his record shows that any more arch bars broke, welded, than those that were not welded.

Mr. Kleine: Yes, sir.

Mr. Barnum: What percentage, please?

Mr. Kleine: I have not got the percentage, but the one that caused the serious wrecks and where we had the arch bars examined afterwards, we found it was due to the welded arch bars; and in a number of cases tank cars were involved, involving inflammable liquors.

J. J. O'Brien (Term. of St. L.): In the terminals at St. Louis we handle between 12,000 and 15,000 cars in 24 hours, and I am frank to say that in a number of years I have not heard of an accident being attributed to a welded arch bar.

(Mr. Kleine's motion was put and lost.)

The Chairman: The original motion will now be put before you, the motion to accept the report of the Arbitration Committee.

(The motion was put and carried.)

#### PRICES FOR LABOR AND MATERIAL

The committee in this year's report has brought the passenger car price rules up to the same standard as the freight car prices. Below is given an abstract of the more important recommendations of the committee, for the changes in price rules, both freight and passenger cars, that will make them conform more nearly to the proper cost for both labor and material:

One axle, 50 000 lb. or under.....	Scrap. \$1.65
One axle, 60 000 lb.....	\$2.75
One axle, 80 000 lb.....	2.00
One axle, 100 000 lb.....	3.00
One axle, 140 000 lb.....	3.70
	4.50

Add the following paragraph on page 53 following the Table of Prices:

The following average scrap credit prices must be allowed for wheels removed from dismantled cars, under the provisions of Rule No. 120:

One cast iron wheel, 50 000 lb. capacity or under.....	Scrap. \$2.75
One cast iron wheel, 60 000 lb. capacity.....	2.90
One cast iron wheel, 80 000 lb. capacity.....	4.75
One cast iron wheel, 100 000 lb. capacity.....	4.75

Substitute the following paragraph for the first full paragraph on page 54:

The price for new wrought steel wheels shall be based on the scrap value of \$4.50 for metal inside the condemning limit (which is  $\frac{1}{4}$  in. above the limit groove), plus \$0.625 for each  $\frac{1}{16}$ -in. of  $1\frac{1}{2}$ -in. service metal (on radius of tread), in connection with standard full flange contour, also base of limit groove not less than  $29\frac{1}{2}$  in. diameter. In no case shall a charge or credit for service metal be made in excess of  $1\frac{1}{2}$  in.

Rule 102—Page 61.—Add an additional paragraph as follows:

In computing charges for lumber, if finished length of the piece in odd inches is under 6 in., the half foot will be allowed for rough length; if 6 in. or over, the even foot will be allowed. Finished thickness, if under 1 in., consider as 1 in. rough; if 1 in. or over, but under  $1\frac{1}{2}$  in., consider as  $1\frac{1}{2}$  in. rough;  $1\frac{1}{2}$  in. or over, but under 2 in., consider as 2 in. rough; and upward on corresponding scale. The same scale to apply to width, except for matched sheathing, roofing, lining and flooring, which shall be charged according to M. C. B. specifications for rough width. The total amount of each item may be charged in even feet B. M.; if fractional amount is less than  $\frac{1}{2}$  ft., it should be dropped.

Rule 116—Page 88.—Change the price of 8-in. air brake, as shown in first paragraph of this rule from \$27.50 to \$10.

Page 90.—Under head of "Bodies for 8-wheel cars, steel," change Item 1 to read:

Box, wooden body, metal underframe, 50 tons capacity, 36 ft. 6 in. or over, but less than 40 ft. over end sills.....\$825.

Change Item 2 to read:

Box, wooden body, metal underframe, 50 tons capacity, 36 ft. long or over, but less than 38 ft. 6 in., over end sills.....\$740.

Change Item 3 to read:

Box, wooden body, metal underframe, 50 tons capacity and over, 40 ft. long or over, but less than 46 ft., over end sills.....\$850.

Change Item 4 to read:

Box, wooden body, metal underframe, 30 tons capacity and over, 36 ft. long, over end sills.....\$725.

Change Item 5 to read:

Box, wooden body, metal underframe, 40 tons capacity and over, but less than 50 tons capacity, 36 ft. long and over, but less than 38 ft. long, over end sills.....\$730.

Change Item 6 to read:

Box, wooden body, metal, underframe, 40 tons capacity, but less than 50 tons capacity, 38 ft. long but less than 40 ft. long, over end sills.....\$775.

Change Item 7 to read:

Box, wooden body, metal underframe, 40 tons capacity, but less than 50 tons capacity, 40 ft. long or over, but less than 46 ft. over end sills.....\$800.

Eliminate Items Nos. 8, 9, 10 and 11 and substitute the following:

Box, all-steel, any capacity or length.....\$0.0325 per lb.

Eliminate Items 12, 13, 14, 15 and 16 and substitute the following:

Flat, wooden floor, metal underframe, any capacity or length.....\$0.0325 " "

Eliminate Items 17, 18, 19, 20, 21, 22, 23, 24, 29, 30, 31, 32, 43 and 44 and substitute the following:

Gondola, all steel, any capacity or length, having either solid, drop or hopper bottom or self-clearing by floor dropping on side.....\$0.0325 " "

Eliminate Item 33.

Eliminate Items 35, 36, 37, 38, 40, 41 and 42 and substitute the following:

Hopper, all-steel (including coke cars), self-clearing, any capacity or length.....\$0.0325 " "

Items 45 and 46 should be made to follow other items covering gondola cars.

Insert the following item after Item 37:

Stock, wooden body, metal underframe, 50 tons capacity, 36 ft. long or over, over end sill.....\$775.

Rule 117—Page 94.—Change second paragraph of this rule to read:

In the case of all-steel car bodies or car bodies with steel underframes and steel superstructure frames, the depreciation shall be figured at 5 per cent per annum. Steel superstructure frame car indicates a car having the side and end uprights, braces and plates riveted together.

Change third paragraph to read:

In the case of car bodies with steel underframes and wooden superstructure the depreciation shall be figured at  $5\frac{1}{2}$  per cent per annum, with the exception of steel underframe flat cars having wooden floors, which shall be figured at 5 per cent per annum.

Page 95.—Change last paragraph of this rule to read:

The amounts \$10 and \$35 for air brakes shall not be subject to any depreciation.

Page 135.—Add a new paragraph under the 4th paragraph, reading: On electrical head end lighting system of passenger equipment trains, a charge of 40 cents shall be made for the use of electrical equipment for each 100 miles car is run. The charge does not include cost of coal and attendant. (Expense of attendant may be added if furnished and charged for on mileage basis.)

The report is signed by:—F. H. Clark (B. & O.), chairman; H. H. Harvey (C., B. & Q.); C. E. Carson (N. Y. C.); C. F. Theile (P. C. C. & St. L.); Ira Everett (L. V.); C. C. Swanson (A., T. & S. F.), and Sam'l Lynn (P. & L. E.).

(The report was approved.)

#### COMPENSATION FOR CAR REPAIRS

The committee on the subject of Compensation for Car Repairs has been instructed to give consideration to the following items:

First:—Is it desirable to make an allowance for overhead charges incident to the repairs of cars?

Second:—If so what items should be included therein?

**Third:**—What ratio should such overhead charges bear to the labor cost?

The conclusions of the committee regarding each of these subdivisions of the subject are:

**First:**—That it is proper that those making repairs to cars should be fully reimbursed for the actual expense incurred by them, including what are generally referred to as overhead charges.

**Second:**—That there should be added to the direct labor cost an allowance for the expenditures made for:

**DIRECT SUPERVISION.**—This item includes the proper proportion of the wages of foremen, assistant foremen, gang foremen, clerks, etc., chargeable to the actual repairing of freight cars. Amounts paid all other men whose time is properly chargeable to freight-car repairs, excepting those engaged in the manufacture of stock material.

**SHOP EXPENSES.**—The proportion assignable to the actual repairing of freight cars, the expenditures for general employees, power, heating, lighting, shop supplies, and incidental expenses connected with shop operation.

**SHOP SWITCHING.**—As provided for by the authorized accounting system.

**SUPERINTENDENCE.**—The proportion properly chargeable to freight-car repairs of the salary and expenses of the general superintendents motive power, mechanical superintendents, master car builders, superintendents motive power, master mechanics, etc.

**USE OF FACILITIES.**—To include interest on the investment, depreciation, maintenance, insurance and taxes on that part of the plant or plants used for the repairing of freight cars.

Attention is directed to the fact that the allowances mentioned above should be carefully segregated so that the allowances applicable to the repairs of cars, and those applicable to the manufacture of material, should be separate and distinct. As for material, an especially determined allowance, including an adequate amount for storehouse expenses, is required.

**Third:**—The ratio that such overhead charges should bear to the labor cost.

To determine as accurately as practicable what allowance should be made for the items mentioned above, the committee assigned the task of assembling the necessary data to the subcommittee named below:

W. L. Wilt, chief motive power clerk, Penna. Lines West, chairman.

J. H. Connor, chief motive power clerk, Union Pacific.

Wm. McMunn, general car inspector, N. Y. C.

F. H. Swerengen, M. C. B. Streets Western Stable Car Line.

E. E. Jette, M. C. B., Morris & Company.

W. A. Guy, assistant general car inspector, Penna. Lines West.

The experience of all of these gentlemen is such as to especially qualify them for the work required. After considerable study this subcommittee prepared a list of questions, which, after approval by the committee was submitted to the association, as Circular No. 8.

Owing to the large amount of work required to compile the necessary data, and the short time available to complete the report, it was decided to request the information for the month of November, 1914, only.

Replies were received from 58 railroads, owning 1,618,675 cars, and 11 private car lines, owning 52,102 cars. Summarizing the replies gives the amounts expended as follows:

		Average per Hour.
Direct labor, 8,019,862 hours .....	\$2,226,750.85	27.7c
Direct supervision .....	303,294.00	
Total .....	\$2,530,044.85	
or the average expenditure per hour of direct labor for labor and direct supervision.....		31.5c
The proportion of shop expenses, shop switching and superintendence allotted to the repairing of freight cars amounted to \$758,182.66, or for each hour of direct labor.....		9.4c
That is, for 8,019,862 hours direct labor there was expended:		
Direct labor .....	\$2,226,750.85	
Direct supervision .....	303,294.00	
Shop expense, shop switching and superintendence..	758,182.66	
Total .....	\$3,288,227.51 or 41.0c	

Consequently, as the average hourly payment for direct labor was 27.7c per hour, and for direct labor and all supervision was 41.0c per hour, an allotment of 48 per cent. must be added to the hourly payment for direct labor to fully reimburse those repairing freight cars, without any allowance for the use of facilities, such as interest on the investment, depreciation, taxes and insurance on, and maintenance of, shops, repair tracks, etc.

While the committee made inquiry as to the proper allowance that should be made for the use of facilities, the wide divergence in the replies received indicates that precise data are not available, and it is therefore deemed desirable to postpone consideration of this point until more correct information may be

obtained; perhaps until the valuation of railway properties now in progress indicates a more definite line of procedure.

It is important to note that all of the data given above refers only to what may be called shop repairs; that is, where the use of facilities is involved, as the committee is of the opinion that such light repairs as are ordinarily made in classification yards or on the line may be more satisfactorily covered by fixed prices, as is now the practice in application of air-brake hose, etc.

The committee recommends:

**First:**—That the prices for individual items of work performed, as now embodied in the Code of Rules of Interchange of Cars, be based on the average time required to perform each operation. That to simplify calculation and accounting a rate of 28 cents per hour be used as representing the average hourly cost for direct labor, adding to this amount 12 cents per hour as meeting the requirements for overhead charges. The reduction in the total hourly charge from 41 cents to 40 cents reduces the overhead rate from 48 per cent to 44.4 per cent, and is felt advisable, due to the fact that the month of November, for which the figures were obtained, might not generally be considered as a representative month.

**Second:**—That fixed prices, including labor and material, be determined and listed separately for such items as: Application of cotter keys, knuckle pins, knuckles, air hose, safety appliances, brake shoes, and kindred repairs such as are ordinarily done in classification yards. These fixed prices to apply whether the work is performed in the classification yards, shops or repair yards.

**Third:**—That this report, with the approval of the convention, be referred to the Committee on Prices for Labor and Material, with such instructions as may be necessary to make effective the above recommendations.

This report is signed by: D. F. Crawford, chairman (Penna. Lines); F. F. Gaines (C. of Ga.); M. K. Barnum (B. & O.); C. E. Fuller (U. P.); C. F. Giles (L. & N.); Thomas Beaghau (U. T. L.); H. L. Osman (Morris & Co.), and M. F. Covert (Swift Ref. Trans. Co.).

T. W. Demarest, (Penna. Lines): I move that the recommendation of the Committee be adopted by the Association and the report in turn referred to the Price Committee for their consideration during the coming year.

(The motion was carried.)

#### SETTLEMENT PRICES FOR REINFORCED WOODEN CARS.

After the committee was constituted its scope was enlarged to include the subject of depreciation in relation to settlements for cars destroyed on foreign roads. The principal question involved is to determine what measure of repairs and the character of additions and betterments which so increase the strength, utility and value of a unit of equipment that fairly justify a complete



J. McMullen  
Chairman, Committee on Settlement  
Prices for Reinforced Wooden Cars

depreciation cut-off. The committee, therefore, had two distinct problems before it and they are discussed separately.

**Settlement Prices.**—To get the proper perspective of this problem it is necessary to keep steadily in view the essential fact that the basic, arbitrary prices now provided in the rules for wooden cars are quite liberal; hence, before it may be adjudged fairly that any particular part of a car or an appliance, even though

obviously an improvement over wooden construction, merits a special price as a betterment, it should be determined whether the basal price does not cover, reasonably, any difference in value that such part or appliance bears over the type of construction upon which the basic prices were determined. Having this fully in mind, the committee is of the opinion that the following items should be added to the present basic prices for car bodies when so equipped.

It is recommended that the wording of the last paragraph of Rule 116, on page 89, and the first paragraph on page 90, be changed to make the language uniform with that of the new matter proposed by the committee, and that the second and third paragraphs of this rule, on page 90, be omitted entirely. Following the second paragraph from the bottom of page 89, the committee submits the following revision and additions to Rule 116:

The prices for car bodies contained in the foregoing schedule are exclusive of the following items, the prices of which may be added when a car is so equipped:

- (a) Double-deck stock cars, per car.....\$25.
- (b) Metal body bolsters; also composite body bolsters in which the metal members are at least 8 in. in depth and have an aggregate minimum sectional area of 16 sq. in., provided car is 60,000 lb. capacity or over and so stenciled, and has trucks with journals  $4\frac{1}{4}$  in. or over when new, per car.....\$30.
- (c) Center sills or continuous metal draft members shall be figured per lineal foot per member, according to depth and weight as follows and including draft lugs riveted on, or cast integral on cast-steel extensions. (Where such cast-steel extensions are used, the metal center sills or continuous metal draft members to which they are attached must be figured full length of car.)
  - Eight in. in depth and not less than 18 lb. per ft..... \$0.90
  - Nine or ten in. in depth and not less than 20 lb. per ft.... 1.10
  - Twelve in. in depth and not less than 25 lb. per ft..... 1.30
  - Fifteen in. or over in depth and not less than 33 lb. per ft. 1.50
- (d) Cover plate used on metal center sills or continuous metal draft members, per lineal foot of the sills actually covered, whether plate is applied on top or bottom, or both, or in part on top and in part on bottom.....This price shall not apply to what is commonly known as tie plates, regardless of dimensions ..... .65
- (e) Metal draft arms extending 24 in. or more back from center line of body bolster, including draft lugs, whether riveted on or cast integral, per car. 65.
- (f) Friction draft gears, per car..... 25.
- (g) Metal needle beams, when used in conjunction with metal center sills or continuous metal draft members, per car..... 10.
- (h) All-steel ends of the corrugated type, per car..... 40.
- (i) Where allowances as above are based upon length, fractional parts of a foot in the aggregate length shall be counted as one foot, if one-half or greater; if less than one-half, they shall be dropped.

NOTE.—Paragraphs (a), (f) and (h) to apply to all cars so equipped.

**Depreciation.**—On the question of depreciation to be figured on rebuilt cars, the committee, after carefully reviewing the question from various angles, found it was unable to come to any conclusion, or to arrive at any workable basis upon which all could agree. It asks that this question, together with the general provisions in Rule 117 limiting depreciation to 60 per cent of value new and covering the rate per cent of depreciation, be carried forward in the work of the ensuing year.

The report is signed by:—J. McMullen (Erie), chairman; H. G. Griffin (C. P. R.); T. J. Burns (M. C.); J. E. Mehan (C., M. & St. P.); H. H. Harvey (C., B. & Q.); C. N. Swanson (A., T. & S. F.); F. F. Gaines (C. of G.).

#### DISCUSSION

J. J. Tatum (B. & O.): There are some items of cost in this report which would very much affect our road if they are adopted. Reducing the allowance for the metal body bolster from \$40 to \$30 will result in bringing the cost of the improvements which we have applied to our cars below the figure which they cost us. In place of being an encouragement for the improvement of equipment, it will rather lead us to wear out our cars as they were originally built. We paid between \$120 and \$130 for a center sill for our equipment with the bolster built integral. The present M. C. B. price is \$80, plus \$40, which is about what we pay for these articles, but these changed figures will very materially reduce it. I move that the matter be referred to letter ballot.

M. K. Barnum (B. & O.): If the report is to be passed on as a whole I would like to second Mr. Tatum's motion.

T. J. Burns (M. C.): As you are probably aware, the committee has had a good deal of work to do. One phase of the work was to look after the settlement price, which had to do with rule 116, and the other phase of the work assigned to the committee was to figure the question of depreciation on rebuilt cars. In the matter of rule 116 I feel we could safely refer that to letter ballot, but on the question of depreciation, I feel that the committee has come back to the convention in a sense empty-handed. I would suggest on that phase of the work, that the committee be continued along this line, and the membership of the committee enlarged. I should suggest a representative committee of about ten be appointed and see if they cannot come back next year with some practical proposition on this matter. In speaking of the underframe, in order to protect the car owner, it occurred to the committee after the paper was written, that possibly there should be included in this report, and submitted with the report to letter ballot, a proposition that would provide for the returning of the underframe to the owner of the car, at his option. That would protect the car owner until such time as we can arrive at some conclusion as to what we shall do with the rebuilt car. The committee's idea of a rebuilt car is a car taken to the shop, and given a new underframe and steel ends and brought up to modern requirements. I think the best way to handle this report would be to submit it to letter ballot as a whole, and add a paragraph, providing it is agreeable, covering the return of the underframe to the owner of the car at his option.

Mr. Tatum: I make an amendment to my motion that each item of the report be submitted to letter ballot separately.

Mr. Barnum: It seems to me that it would be desirable to take the suggestion under the heading "Depreciation," and to have the committee continued and instructed to make further study of that question by itself.

T. H. Goodnow (C. & N. W.): It would be better for Mr. Tatum, even if he is not getting what he feels is his whole due, to accept what the committee offers for the year, and then get the increase next year. Hundreds of thousands of cars are now being reinforced, and settled for on their original cost, and it is a question if that part of the Committee's report has not been overlooked where they refer to the basic prices under the rules established at the present time.

Mr. Tatum: I do not think we should make a rule unless we make it as near right as we can when we start.

J. J. Hennessey (C. M. & St. P.): In my opinion there is only one class of cars that will be really barred from receiving the benefit that this report today covers, and that is the class of cars that have the steel casting two feet back of the body bolster, extending that distance back. The cars that Mr. Tatum and Mr. Goodnow speak about, that have metal center sills should be settled for, not on the basis of the original cost of the car, but they should be settled for on the basis of the cost of the car as it exists, what is allowed in the rules of the present time for metal center sills only, and then the depreciation will have to be figured from the time the car was originally built, so really the only thing that seems to me to be before the Convention is the question of the cars that are equipped with the cast steel draft arm, not the continuous sills.

Mr. DeGraff (Erie): There is a decided difference of opinion as to what the question involved is. Mr. Hennessey says it is confined to the cast steel extension. The present rules do not provide for a large part of the reinforcing of old equipment that is being done today in this country. We are reinforcing between 6,000 and 7,000 of our cars, and we are doing it in a way that we would not get any return, as the rules stand today. We are reinforcing 1,800 of our cars for which the rules do not provide one additional cent of compensation, and these cars are as good as the average steel underframe car, or all steel construction today. Now the present provision was put into rule 116, without referring it to letter ballot, obviously for the purpose of protecting car owners who were reconstructing their equipment in order to stand modern traffic conditions, the conditions the cars must stand up under today. I agree with Mr. Goodnow that this is not the time to refer this to letter ballot. There is no especial damage done if we pass upon this today. It will not be irreparable. If Mr. Tatum does not get exactly what is coming to him, in the end it will balance itself up. We cannot attempt to amend the rules of interchange on the basis of what the effect will be on one railroad. We have a bigger mission here, Mr. Chairman, and that is to protect the railroad interests of the United States, and I will include Canada and Mexico.

Mr. Hennessey: I want to make a correction to my previous statement, and refer to one thing that is not covered,

and that is the all-steel end. That I should have included in my previous remarks.

H. H. Harvey (C. B. & Q.): I do not think Mr. Tatum figured his car costs up right. He gives \$120 as the cost of the reinforcing of the car, \$80 for the sills and \$40 for the bolsters. He will find he will get a whole lot more in the committee's present recommended prices than he gets under the present prices—those which are now in vogue. The committee did not try to cut down any compensation, but to even up the matter between the railroads. If Mr. Tatum will figure the center sills on the foot price given in the report he will find that he will get more than \$80. The price is regulated per foot per member. Under the present rule, a man putting metal draft arms on, he does not get anything for it. If he puts on friction draft gear, he gets nothing for that. If he puts metal ends in, there is nothing for that. In fact, all he gets is for his steel center sills and body bolsters, and I think it will be a mistake to put this thing off for another year.

Mr. Barnum: I suggest before the report is sent out that the items referred to by Mr. Harvey be made to read 18 lb. per foot per member. Otherwise I think it is likely to be misunderstood.

D. R. MacBain, (N. Y. C.): The majority of the equipment in the country today is not up to the standard necessary for safe and successful and economic operation. That is one point we should consider. The next point is to consider the means of getting the equipment to that point of efficiency. If we stop progress by any laws passed by this organization, that is to say, if we legislate against anything that any road is trying to do to bring the equipment up to its proper efficiency, we are doing the wrong thing. The road I am connected with has in the past 6 or 7 years equipped some 35,000 or 40,000 cars with steel center sills, steel ends, and various other improvements which bring the car up to a better state of efficiency than it was the day it was built. If one of these cars of ours is destroyed on a foreign road, it seems to me a matter of equity that it should be considered exactly the same as though a farmer borrowed my thousand dollar wagon and broke it, and the only fair thing for him to do would be to buy me a new wagon in its place.

F. W. Brazier (N. Y. C.): All we ask is that we be paid for our betterments which are put on the car. I see no harm in the report going through. It is not business-like to destroy a car belonging to the New York Central, on which we have spent \$400 or \$500, and then, in the settlement, carry that car back twelve years to the time when it was originally built.

Mr. Burns: While the committee has provided for a charge to take care of the underframing, as the report stands now, all a man will get who puts the underframe on now will be the depreciated value of the underframe. That is why I suggested it might be possible for the owner to have the underframe returned.

C. F. Thiele (Penn Lines): How will you decide between two roads, where a car is destroyed, which is equipped with the underframe? How is the charge to be arrived at, \$10, \$12 or \$18 per foot?

J. MacMullen (Erie): The committee bases its figures on the weight of the channel used together with the depth.

F. H. Stark (Montour): I move to amend the committee's report making an allowance of \$36 instead of \$30 for the metal body bolster. If we can compromise on this point, I believe that it is advisable to act now.

Mr. Goodnow: I happen to know something regarding the work of the committee, and believe that the prices they have established are as equitable to all as they can be at this time. It is possible in another year the prices will have to be changed, the same as any other prices are changed.

(The motion to submit the report to letter ballot was withdrawn.)

Mr. Goodnow: I move that the committee's report be approved and that the committee be continued to handle the question of depreciation as they ask.

(The motion was carried.)

**AN EGYPTIAN RAILWAY BRIDGE.**—A curious fact is reported with reference to a new combined road and railway bridge which was to have been erected at Emambagh in Egypt. The contract was placed with a firm which in turn placed the order for construction with a firm in Northern France. The bridge was constructed in the works, one span was shipped and has since been delivered in Egypt; then the Germans invaded France and captured the remainder of the spans. As they are not likely to give them up, work on the bridge is temporarily abandoned.

## FOUND

A ladies' pin was found on the floor of the ball room on the pier last night. The loser can recover it by calling at the booth of the *Daily*.

## PRIZE WINNERS IN THE KICKERS' CONTEST

The ties for first and second prizes in the Kickers' contest of the golf tournament were played off yesterday. George L. Bourne defeated R. H. Weatherly for the first prize, and the second prize was won by B. P. Flory, the others tied for it played with him being J. D. Purcell, W. L. Allison, and H. M. Perry.

## THE DANCE LAST NIGHT

The opening dance for the Master Car Builders held last evening proved quite as successful as those held on the pier last week. The program was similar to that of last Wednesday night, being entirely informal, with Miss Betty Lee in costume recital and music by the Don Richardson Orchestra. During the day it was very warm, but long before 9.30 P. M., when the dancing commenced, it was evidenced that it would take more than heat to keep the crowd away. Owing to the fact that the entertainment committee did not use the orchestra on the pier Sunday, one hour's more music was provided, and was much more appreciated than would have been the case had the original schedule been followed. The committee in charge were Walter H. Bentley, chairman; W. K. Krepps, Burton W. Mudge, H. W. Scott, C. D. Eaton, A. B. Wegener, J. P. Landreth, J. F. A. Comstedt, W. W. Melcher, C. C. Farmer.

## THE NUMBERS USED IN THE KICKERS' HANDICAP

It is not generally understood how the numbers used on Saturday as a basis for determining the results of the kicker's handicap contest in the golf tournament were arrived at. As was announced in advance, the players were allowed to choose any handicaps that they pleased and the winning net scores had to be between 71 and 76. After the players had gone out on the course, slips marked with the numbers from 71 to 76 were placed in a hat. They were then drawn out at random by George R. Carr, chairman of the Entertainment Committee, who picked up numbers 71, 74 and 75. This determined that players coming in with a net of 71 would be in line for the first prize; those coming in with a net of 74 for the second prize, and those with a net of 75 for the third prize. Through an oversight L. A. Cameron, who came in with a net of 71, was not included among those who were mentioned as having tied for the first prize. Mr. Cameron will play off the tie with G. L. Bourne and R. H. Weatherly.

## R. S. M. A. COMMITTEE APPOINTMENTS

President-elect Ostby has named the following committees and committee chairmen for the coming year:

Hotel Committee, J. H. Kuhns, Republic Rubber Company, Chicago (chairman); P. J. Mitchell, Philip S. Justice & Company, Philadelphia, Pa.; C. D. Eaton, American Car & Foundry Company, New York.

Finance Committee, J. C. Currie, Nathan Manufacturing Company, New York (chairman); J. F. Schurch, Damascus Brake Beam Company, Cleveland, Ohio; C. E. Postlethwaite, Pressed Steel Car Company, Pittsburgh, Pa.

Badge Committee, Edmund H. Walker, Standard Coupler Company, New York (chairman); C. B. Cass, Westinghouse Air Brake Company, St. Louis, Mo.; J. P. Schurch, Damascus Brake Beam Company, Cleveland, Ohio.

Exhibit Committee, C. B. Yardley, Jr., Lubricating Metal Company, New York (chairman); George H. Porter, Western Electric Company, Chicago; J. G. Platt, Hunt-Spiller Manufacturing Corporation, Boston, Mass. A sub-committee on Lighting

and Power will be appointed to insure plenty of light and power.

By-Laws Committee, C. E. Postlethwaite, Pressed Steel Car Company, Pittsburgh (chairman); F. E. Beal, Magnus Company, Inc., Atlanta, Ga.; C. F. Elliott, American White Lead & Color Works, Detroit, Mich.

Entertainment Committee, Gilbert E. Ryder, Locomotive Superheater Company, New York (chairman).

Enrollment Committee, Charles W. Beaver, Yale & Towne Manufacturing Company, New York (chairman).

Transportation Committee, J. L. Randolph, Economy Devices Corporation, New York (chairman).

John D. Conway has been re-elected secretary and treasurer of the association.

#### ADDITIONAL MASTER CAR BUILDERS' REGISTRATION

Acker, C. B., General Car Foreman; P. S. & N.; Monticello.  
 Adams, H. T., G. C. F.; Wabash; Grand Atlantic.  
 Akans, Geo., M. M.; Southern; Traymore.  
 Andrus, Chas., Supt. Shops.; Mather Stock Car Co.  
 Barba, C. E., Asst. Engr.; Chalfonte.  
 Barnes, P. H., G. C. F.; B. & O.; Colonial.  
 Bartlett, Henry, G. M. S.; B. & M.  
 Benjamin, C. H., Dean Engineering; Purdue University; Haddon Hall.  
 Blair, H. A., D. M. C. B.; B. & O.  
 Borrowdale, J. M., S. C. D.; I. C.; Brighton.  
 Breyer, J. S., M. M.; Southern; Continental.  
 Brogan, James P., G. F.; D. L. & W.; Haddon Hall.  
 Burns, T. J., S. R. S.; Mich. Cent.; Traymore.  
 Buzzell, O. D., G. F. C. D.; A. T. & S. F.; Chalfonte.  
 Carmer, J. H., G. F.; P. B. & W.; Traymore.  
 Charlton, George J., G. C. F.; D. L. & W.; Pennhurst.  
 Courson, J. F., G. F. Wall Shop; Seaside.  
 Cox, Millar F., A. S. M.; L. & N.; Chalfonte.  
 Cunningham, J. L., M. M.; P. B. & W.; Chalfonte.  
 Davis, M. J., A. E. M. P.; P. R. R.; Chalfonte.  
 Davis, W. H., M. E.; N. Y. O. & W.; Chalfonte.  
 Demarest, T. W., S. M. P.; Penna. Lines West; Brighton.  
 De Vilbiss, E. B., Asst. Eng. M. P.; Penna. Lines West; Brighton.  
 Dickinson, F. W., M. C. B.; B. L. & E. R. R.; Chalfonte.  
 Dobson, W. E., General Auditor; Cambria & Indiana; Dennis.  
 Donehue, Thos., Div. Gen. Car Fore.; N. Y. C.; Fredonia.  
 Eberle, Wm. F., G. F.; P. R. R.; Chalfonte.  
 Ewing, J. J., M. E.; C. & O.; Shelburne.  
 Ferguson, George M., Supt.; Lake Terra; Seaside.  
 Fox, Frank L., G. F. C. D.; P. M.; Traymore.  
 Fryer, C. V., G. F. C. D.; N. Y. O. & W.; Chalfonte.  
 Graff, F. M., S. A. M. D.; Erie.  
 Gray, Guy M., S. M. P.; B. L. & E.; Chalfonte.  
 Grove, P. L., M. M.; P. R. R.; Chalfonte.  
 Hagen, Charles, C. F. C. D. R. R.; W. & L. E.; Pennhurst.  
 Halbert, M. W., C. I. I.; American Assn. of R. R. Supts.; Haddon Hall.  
 Hammett, P. M., S. M. P.; Maine Central; Shelburne.  
 Harding, E. N., G. P. I.; I. C.; Alamac.  
 Henry, J. M., S. M. P.; P. R. R.; Chalfonte.  
 Johnson, J. O., Foreman Car Repairs; Southern; Fredonia.  
 Joughins, G. R., M. S.; Intercolonial; Chalfonte.  
 Kaderly, W. F., S. M. P.; G. S. & F.; Haddon Hall.  
 Kapp, W. F., S. S.; R. F. & P. Ry.; Blenheim.  
 Kent, F. S., C. C. I.; P. R. R.; Blenheim.  
 Kinter, D. H., G. F. C. D.; Monongahela; Watkins.  
 Kipp, A., G. C. I.; N. Y. O. & W.; Traymore.  
 Knox, W. J., M. M.; B. P. & P.; Traymore.  
 Lindstrom, C. A., Chief Engineer; P. A. & McK. R.; Chalfonte.  
 Looney, W. E., Car Foreman; M. O. & G. of Tex.; Haddon Hall.  
 Maddox, C. W., C. C. I.; C. & O.; Chalfonte.  
 McBride, B., M. M.; Southern; Dennis.  
 McCully, B. N., F. C. D.; N. Y. P. & N.; Haddon Hall.  
 McIlvaine, C. L., M. M.; N. Y. P. & N.; Brighton.  
 McKinsey, C. R., G. C. I.; P. B. & W.; Runnymede.  
 Mercur, R. E., T. M.; Westmoreland Coal Co.; Craig Hall.  
 Meredith, H. P., M. M.; P. R. R.; Brighton.  
 Miller, R. S., M. C. B.; N. Y. C. & St. L.; Traymore.  
 Milton, J. H., S. C. D.; Rock Island; Chalfonte.  
 Moseley, W. S., Mech. Engr.; C. C. & O.; Grand Atlantic.  
 Nordberg, Albert, M. M.; P. & S.; Ralston.  
 O'Dea, P. J., General Insp. Car Dept.; Pennhurst.  
 O'Donnell, T. J., Arbitrator; N. Y. C.; Pennhurst.  
 Orchard, J. H., F. C. D.; D. & H.; Bothwell.

Osmer, J. E., M. C. B.; M. & L. S.; Brighton.  
 Peterson, A. F., M. C. B.; Cold Blast Trans. Co.; Haddon Hall.  
 Pfafflin, Louis, M. M.; Indianapolis Union; Biscayne.  
 Porter, G. A., Supt. Transportation; Indian Refining Co.; Blenheim.  
 Ramsdell, T. M., M. C. B.; O. W. R. R. & N.; Chalfonte.  
 Reese, O. P., Asst. Eng. M. P.; Penna. Lines West; Brighton.  
 Richards, C. F., Chief Car Inspector; L. & H. R.  
 Rieckman, W. H., A. M. M.; B. & M.  
 Ripley, C. T., G. M. F.; A. T. & S. F.  
 Robbins, F. S., Asst. M. M.; P. R. R.  
 Rommell, Geo., M. M.; P. & R.; Continental.  
 Sasser, E. C., M. M.; Southern; Shelburne.  
 Schmoll, G. A., S. M. P.; B. & C.; Blenheim.  
 Senger, J. W., M. C. B.; N. Y. C.; Traymore.  
 Slayton, F. T., S. M. P.; Virginia; Arlington.  
 Small, J. W., S. M. P.; Tampa & Gulf Coast.  
 Smith, H. E., C. & E. T.; N. Y. C.; Haddon Hall.  
 Stoll, W. J., Chief Interchanged Inspector; Pennhurst.  
 Sumner, Eliot, M. M.; P. R. R.; Brighton.  
 Sweetman, E. M., M. M.; Southern; Traymore.  
 Tatum, J. J., S. F. C. D.; B. & O.; Chelsea.  
 Trapnell, F. W., Chief Interchange Inspector; Chalfonte.  
 Trumbull, A. G., M. S.; Erie; Chalfonte.  
 Vittum, J. E., Chief Joint Inspector; Colwin.  
 Way, E. S., Gen'l Foreman M. C. B. Clearing House.  
 White, H. J., G. C. F.; Can. Nor. Que.  
 Yergy, J. P., G. C. I.; P. R. R.

#### ADDITIONAL MASTER MECHANICS' REGISTRATION

Akans, Geo., M. M.; Southern; Traymore.  
 Anderson, J. A., M. M.; B. & O.  
 Beamer, Jas. A., M. M.; P. R. R.; Chalfonte.  
 Breyer, J. S., M. M.; Southern; Continental.  
 Burns, T. J., S. R. S.; Mich. Cent.; Traymore.  
 Cox, Millard F., A. S. M.; L. & N.; Chalfonte.  
 Davey, Thomas S., M. M.; N. Y. S. & W.; Bothwell.  
 Demarest, T. W., S. M. P.; Penna. Lines West; Brighton.  
 Eliot, Sumner, M. M.; P. R. R.; Brighton.  
 Ewing, J. J., M. E.; C. & O.; Shelburne.  
 Gray, Guy M., S. M. P.; B. & L. E.; Chalfonte.  
 Hammett, P. M., S. M. P.; Maine Central; Shelburne.  
 Hess, Geo. F., S. M.; K. C. S.; Blenheim.  
 Hildreth, F. E., M. E.; Vandalia; Dennis.  
 Kaderly, W. F.; S. M. P.; G. S. & F.; Haddon Hall.  
 Kapp, W. F., S. S. & M.; R. F. & P.; Blenheim.  
 Kneass, Strickland L.; Wm. Sellers Co., Ltd.; Brighton.  
 Langton, Geo. H., M. M.; S. A. L.; Sterling.  
 McBride, B., M. M.; Southern; Dennis.  
 Mechling, J. E., M. M.; Vandalia; Haddon Hall.  
 Meredith, H. P., M. M.; P. R. R.; Brighton.  
 Moseley, W. S., Mech. Engr.; C. C. & O.; Grand Atlantic.  
 Rhuark, F. W., M. M.; B. & O.; Pennhurst.  
 Rieckman, W. H., A. M. M.; B. & M.  
 Slayton, F. T., S. M. P.; Virginia; Arlington.  
 Small, J. W., S. M. P.; S. A. L.  
 Smith, H. E., Chemist; N. Y. C.; Haddon Hall.  
 Smith, C. B., M. E.; B. & M.  
 Sweetman, E. M., M. M.; Southern; Traymore.  
 Trumbull, A. G., M. S.; Erie; Chalfonte.

#### ADDITIONAL SPECIAL GUESTS

Adams, H. A., Inter State Com.; Iroquois.  
 Allman, W. N., Draftsman; B. & O.; Arlington.  
 Almy, A. C., Commander; U. S. Navy; Craig Hall.  
 Anderson, J. A., M. M.; B. & O.; Chalfonte.  
 Atkinson, W. S., Purch. Agt.; K. C. S.; Blenheim.  
 Bachman, J. H., Air Brake Instruction; P. R. R.; Brighton.  
 Baldwin, T. C., M. M.; N. Y. C. & St. L.; Traymore.  
 Baker, Horace, Gen. Mgr.; C. N. O. & T. P.; Blenheim.  
 Baker, Robert.  
 Bayley, J. J., Master Mechanic; Southern; Dennis.  
 Beamer, Jas. A., M. M.; P. R. R.; Chalfonte.  
 Beaumont, C. A., Asst. P. W. Inspector; B. & O.; Elwood.  
 Bebout, G. W., Elec. & Shop Eng.; C. & O.; Chalfonte.  
 Belnap, H. W., I. C. C.; Inter State Com.; Iroquois.  
 Berger, A. N., Draughtsman Mech. Engineer's Office.  
 Berberg, Charles G., Conductor; P. & S.; Ralston.  
 Brong, J. E., Gen. Foreman; L. V.; Dennis.  
 Brown, W. C., Chief Clerk, Mech. Depart.; A. & S. F.; Traymore.  
 Burke, John, Virginian; Shelburne.  
 Burns, N. F., Special Inspector; N. Y. C.; Alamac.  
 Butterworth, E. A., Asst. Strk.; P. R. R.; Dunlop.  
 Cadwell, Rev. N. W.  
 Caley, G. H., Elec. Signal Supervisor; N. Y. O. & W.; Traymore.

Canfield, J. B., M. M.; Boston & Albany; Pennhurst.  
 Carson, Ray, Chief Clerk; C. N. O. & T. P.  
 Clark, F. D., Supt.; Cambria & Indiana; Dennis.  
 Coan, Michael, For. Car Inspec.; Sterling.  
 Conen, J. J., Foreman; B. & O.; Netherland.  
 Coutant, G. E., General Inspector; Wabash; Alamac.  
 Courtts, J. J., Inter State Com. Co.; Iroquois.  
 Cromwell, J. E., Spl. Inspector M. P. Dept.; B. & O.; Arlington.  
 Dailey, E. B., Asst. Dit. of Purchases; S. P.; Chelsea.  
 Davis, W. L., Foreman; P. R. R.; Arlington.  
 De Vilbiss, E. B., Asst. Ebg. M. P.; Penna. Lines West; Brighton.  
 Dolson, F. L., Asst. M. M.; P. R. R.  
 Drawbaugh, E. L., Chief Car Inspector; Cumberland; Monticello.  
 Driscoll, F. E., Asst. to Pur. Agt.; Erie; Chelsea.  
 Ekling, E. G., Foreman; B. & M.  
 Ellis, W. M., For. Car Dept.; C. N. O. & T. P.  
 Ellsworth, G. M., Chief Motive Power Clerk; P. R. R.; Chalfonte.  
 Fry, B. F., Genl. Car Foreman; D. & R. G.; Haddon Hall.  
 Fosnot, G. N., Chief Clerk M. M.; C. V.; Chalfonte.  
 Fuller, E., M. M.; Southern; Monticello.  
 Gibboney, E. S., Foreman; Huntingdon & Broad Top Mountain; Howard.  
 Gilpin, G. G., Chief Draughtsman; C. B. & Q.; Chalfonte.  
 Grady, L. W., Freight Air Brake Insp.; W. J. & S. S.  
 Greathouse, Mr. L., Acting Gen. Car Inspector; Virginian; Arlington.  
 Hale, Arthur, Chairman Com. on Relations; Brighton.  
 Hampton, Kimber, Chief Joint Inspector; B. & O.; Larchmont.  
 Hauser, Percy, Foreman Office Mech. Engineer; P. R. R.  
 Hayes, T. C., Inter State Com. Co.; Iroquois.  
 Hengstler, David, For. Car Repairs; P. R. R.; Silverdale.  
 Henthorn, J. T., Insp. Test. Dept.; B. & O.; Brighton.  
 Hertzler, S. M., Special Engineer; P. R. R.; Lavyck.  
 Hildreth, F. F., M. E.; Vandalia; Dennis.  
 Hoffman, G. P., Gen. Car Foreman; B. & O.; Lexington.  
 Holder, J. A., General Boiler Insp.; S. A. L.; Islesworth.  
 Hooper, E. R., Clerk; Boston & Albany; Pennhurst.  
 Kemp, J. M. D., Mech. Shop Foreman; Western Maryland; Lexington.  
 Kern, William, Foreman M. P. Dept.; B. & O.; Strand.  
 King, W. C., Car Foreman; N. Y. C.; Craig Hall.  
 Kleine, Herbert J.; P. R. R.; Dennis.  
 Lacy, A. B., Pur. Agent; Virginia; Traymore.  
 Lance, C. C., Shop Engineer; S. A. L.  
 Langston, C. E., Clerk; S. A. L.; Monticello.  
 Langton, Geo. H. K., M. M.; S. A. L.; Sterling.  
 Lawson, Jas. A., Inter State Com. Co.; Iroquois.  
 Lehr, Harry W., General Foreman Pas. Car Insp. P. R. R.; Haddon Hall.  
 Leinbach, H. W., Elec. Eng.; W. & L. E.; Dennis.  
 Levee, George C., General Efficiency Eng.; D. & H.; Pennhurst.  
 Lynch, Geo., Chief Joint Trans.; Penna. Lines, West; Borton.  
 Mallingley, E. H., General Car Foreman; B. & O.  
 Marchant, Lewis, Mech. Eng. Office; P. R. R.; Haddon Hall.  
 Marsh, E. P., Gen. Foreman Pass. Car; C. & N. W.; Chalfonte.  
 McGill, A. M., Asst. S. P. M.; L. V.; Traymore.  
 McGrath, C. H., Ch. Clerk, Purchasing Dept.; S. P.; Traymore.  
 Mechling, J. E., M. M.; Vandalia; Haddon Hall.  
 Mendelhall, D. H., Gen. Foreman; Wheeling Term.; Norwood.  
 Morrison, E. D., Gen. For. M. P. Dept.; B. & O.; Lexington.  
 Mvers, R. M., Chief Clerk, Office of Cons. Eng.; S. P.; Osborne.  
 Nelson, C. J., Foreman Car Dept.; C. & N. W.; Chalfonte.  
 Nusz, E. L., Mech. Inspector; B. & O.; Arlington.  
 O'Connor, D. J., Machinist & Engineer; A. B. & A.; Chalfonte.  
 Owens, W. H., Master Mechanic; Southern; Dennis.  
 Palmer, F. Edward, Commander; U. S. Navy; Craig Hall.  
 Parker, H. H., Master Mechanic; Seaboard; Sterling.  
 Patton, C. S., Master Mechanic; S. A. L.; Sterling.  
 Reed, T. L., Asst. Master Mechanic; Seaboard; Sterling.  
 Reese, O. P., Asst. Eng. M. P.; Penna. Lines West; Brighton.  
 Roberts, C. S., Inter State Com.; New Holland.  
 Rosser, H. S., Shop Supt.; S. A. L.; Sterling.  
 Ryan, J. M., Trav. Inspector; C. St. P. M. & O.; Chalfonte.  
 Schaffer, M. L., Foreman; P. R. R.; Dunlop.  
 Schilke, H. A., Battery Insp.; W. J. & S. S.  
 Spratt, T., Asst. P. A.; N. & W.; Traymore.  
 Staley, P. C., General Foreman; P. R. R.; Brighton.  
 Stanton, E., Chief Joint & Car Inspector; Norfolk & Portsmouth Belt Line.

Starritt, W. A., P. A.; C. C. & O.; Grand Atlantic.  
 Stewart, H. A., Supt.; Fruit Growers Express; Chalfonte.  
 Stoderberg, J. T., Draftsman; P. R. R.; Seaside.  
 Stork, W. A., General Foreman; L. V.; Lexington.  
 Stratton, R. T., Draftsman; P. R. R.; Seaside.  
 Swope, B. M., M. P. Inspector; P. R. R.; Seaside.  
 Trappe, W. C., Electrician; P. R. R.; Somerset.  
 Wallace, L. W., Ry. & Industrial Management; Providence University; Chalfonte.  
 Whitsett, W. B., Draftsman; B. & O.; Traymore.  
 Wiese, A. J., General Car Foreman; B. & O.  
 Wilbur, Rollin H., Vice President & General Manager; Lehigh & New England.  
 Wilder, C. D., Foreman Boiler Maker; B. & O.  
 Williamson, C. H., Draftsman, Office Chief Engineer; P. R. R.; Dennis.  
 Wink, L. R., Gen. Inspector; C. & N. W.; Chalfonte.  
 Witmer, C. K., M. M.; Westmoreland Coal Co.; Craig Hall.

### THE McBARMMA GOLF LEAGUE

One of the most interesting organizations ever formed to afford a little recreation in connection with the hard work done by the railway men and railway supply men attending the mechanical conventions is the McBarmma Golf League. The league derives its name, of course, from the initials of the Master Car Builders' Association and the American Railway Master Mechanics' Association. It was organized at Saratoga on June 15, 1906. At that time golf had not become the popular pastime which it is now. It was played in this country by only a few as compared with the large number who now indulge in it. Its virtues as an exercise and a diversion had not become universally appreciated and all those who played it were regarded with some scepticism by the rest of mankind.

For that reason, in the early history of the McBarmma League its members slipped quietly out to the golf course on the Saturday between the conventions and slipped as quietly back again, and the fact that a tournament had raged all day was kept measurably quiet. But within recent years the social and medicinal qualities of golf have become more generally recognized all over the country. Almost everybody is playing it and those who have not begun to do so have begun to regard it with longing rather than suspicion. In consequence, the time has arrived to "expose" the McBarmma Golf League, give some of the facts in its history and for the first time publish the scores made and the prizes won in one of its tournaments.

The charter members of the league number 16. Its usual membership at present is about 30. Every one of its charter members is still living and ten of them took part in the McBarmma tournament last Saturday. These are E. H. Bankard, F. H. Clark, D. F. Mallory, C. F. Quincy, G. H. Sargent, R. F. Carr, F. V. Green, H. A. Gillis, S. P. Bush, and C. F. Street. The charter members who were not here are R. P. C. Sander-son, H. H. Vaughan, O. H. Cutler, T. H. Symington, D. D. Pendleton and F. Conklin.

At the club tournament last Saturday 18 holes were played in the morning and 18 in the afternoon, as usual. The scores made in the morning were as follows:

	Gross.	Handicap.	Net.
C. F. Quincy.....	99	10	89
C. L. Bardo.....	93	6	87
F. H. Clark.....	105	14	91
C. F. Street.....	108	14	94
M. K. Barnum.....	118	18	100
R. F. Carr.....	92	12	80
D. R. McBain.....	105	18	87
J. T. Carroll.....	102	18	84
W. O. Wood.....	111	16	95
J. McNaughten.....	119	18	101
C. C. Elmes.....	123	24	99
J. L. Replogle.....	97	10	87
F. V. Green.....	124	30	94
H. A. Gillis.....	92	6	86
G. H. Sargent.....	122	18	104
W. C. Arp.....	115	14	101
E. O. Warner.....	92	10	82
D. F. Mallory.....	79	0	79
N. M. Garland.....	89	4	85

A. H. Sisson.....	93	9	84
W. L. Conwell.....	95	4	91
S. L. Knease.....	113	10	103
E. H. Bankard.....	102	14	88
W. D. Robb.....	114	24	90

The gold medal for the best gross score was won by D. F. Mallory, who shot a 79. The club handicap cup for the lowest net score was won by R. F. Carr, but passed to W. R. Warner because Mr. Carr won another prize during the day and under the rules of the club no player can be awarded two prizes in the same tournament. The handicap cup must be won by a player three times before he can keep it, and S. P. Bush is the only member who has ever succeeded in doing this.

On Saturday afternoon there was a tournament for class A and class B players. The scores in class A were as follows:

	Gross.	Handicap.	Net.
C. L. Bardo.....	96	4	92
R. F. Carr.....	90	12	78
D. R. McBain.....	106	18	88
J. T. Carroll.....	111	18	93
J. L. Replogle.....	94	10	84
H. A. Gillis.....	88	6	82
D. F. Mallory.....	99	0	99
A. H. Sisson.....	103	0	94
W. L. Conwell.....	93	4	89
E. O. Warner.....	103	10	93

The winner of the first prize was R. F. Carr, and the second went to H. H. Gillis.

The following were the scores in class B:

	Gross.	Handicap.	Net.
C. F. Quincy.....	109	10	99
F. H. Clark.....	107	14	93
C. F. Street.....	107	14	93
M. K. Barnum.....	107	18	89
W. O. Wood.....	101	16	85
C. C. Elmes.....	141	24	117
F. V. Green.....	124	30	94
G. H. Sargent.....	119	18	101
E. H. Bankard.....	118	14	104
W. C. Arp.....	111	14	97
S. L. Knease.....	106	10	96
J. McNaughton.....	113	18	95
W. D. Robb.....	122	18	98

The first prize in this class was won by W. O. Wood, and the second by M. K. Barnum. The Carr handicap cup given by R. F. Carr was won by J. L. Replogle. The Sargent luck cup given by G. H. Sargent, was won by C. L. Bardo. This cup must be won three times in order to be retained. The prize in the approaching and putting contest was won by W. L. Conwell. Each member of the club has a goat medal for which they play during the year; and the man who comes in with the largest number of medals gets a prize. The goat prize was awarded to N. M. Garland, who came in with six medals.

The McBarmma Club had its annual dinner Saturday evening and the following officers were elected for the ensuing year: President, S. P. Bush; vice-president, C. L. Bardo; secretary-treasurer, C. F. Street.

At their dinners the members of the club sing various improvised songs appropriate to the occasion, and the following which was sung Saturday night to the tune of "Mr. Dooley," was a tribute to the directing spirits of the club:

Who is it rules with iron hand  
McBarmma and its crew?  
Who runs the show from soup to nuts?  
Who tells us what to do?  
We dare not say our soul's our own—  
In fact we have no soul;  
They swiped it from us when they swiped  
The Jobs they now control.

'Tis Charlie Quincy, old Charlie Quincy,  
Laying in cahoots with Clement Street;  
Old Bill the Geezer and Julius Caesar,  
They never saw the day they had them beat.

## Conventionalities

F. H. Stark, general superintendent, Montour Railroad, is looking for information as to the desirability of using high or low steam pressure on some new locomotives which are in process of designing.

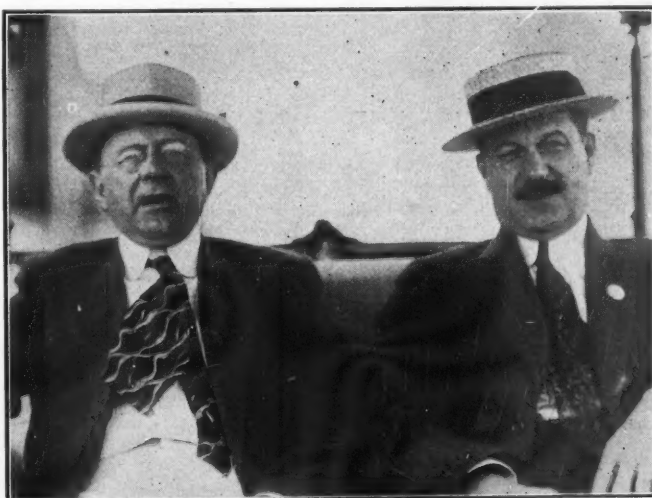
Stephen C. Mason, of the McConway & Torley Company, made another call at the office of the *Daily*, and left behind material



R. T. Jaynes, M. M., Lehigh & Hudson, and Mrs. Jaynes

evidence of the fact that the cigars got here all right. Many thanks, friend Mason!

The steel back gold dust twins, N. H. and T. C. Davis, made the rounds yesterday. They seemed lost without a brake beam or brake shoe exhibit; but they are thoroughly enjoying their temporary retirement from the railway field.



Jack High on the Left, A. E. Calkins, Assistant to Supt. Rolling Stock, N. Y. C., on the Right

G. W. Denyvan (Denny), of the Parkesburg Iron Company, has the distinction of having won the prize, a beautiful vanity box, at the dancing contest on the pier last Tuesday evening. (His was the lucky number that was drawn from the hat.)

F. C. Pickard, master mechanic of the Delaware, Lackawanna & Western at Buffalo, spent several days before coming to the convention riding the Pacific type locomotive with the Riegel

water tube firebox which is now being tested out with a dynamometer car.

Harry Frost left Sunday evening for Lawrenceville, N. J., to be with his son at the graduating exercises of the school at which the young man has been preparing for Princeton. It seems but yesterday when son Frost, then but a few years old, used to be known at the conventions as a "little freezer."

Albert MacRae, who, besides his other activities, is secretary of the Illinois Athletic Club in Chicago, has found that there are 35 railway and supply men attending the conventions who belong to this organization. Twenty-eight of them got together Monday and had a photograph taken out on the pier.

Through an error in the print shop the word "Miss" was made to read "Mrs." and it would appear from the photograph which was shown in the *Daily* of June 14, page 1318, that L. A. Richardson, mechanical superintendent of the first district, Chicago, Rock Island & Pacific, was accompanied by his wife rather than by his daughter, who is visiting the convention this year.

Of the two men killed on board the Metropolitan Line Steamer Bunker Hill on Sunday night, one, George H. Kendrick, was a supply man and left Atlantic City Sunday afternoon for home. He was the Boston representative of the Anchor Packing Com-



**R. D. Smith, Supt. Motive Power & Rolling Stock, B. & A.**

pany. This had been his first convention and his first trip to Atlantic City; and he went away determined to return next year and bring Mrs. Kendrick with him.

Owing to the demands of business B. A. Clements, of Worth Bros. Co., had to return to Chicago Sunday night. He will be much missed by the other members of the entertainment committee. "Burt" was chief assistant to chairman Sawyer of the golf committee in addition to being chairman in charge of the door at all entertainments and his thoughtful attentions to all and his hustling qualities did much toward insuring the success of the assignments given him.

H. W. Belnap, chief of the Division of Safety of the Interstate Commerce Commission, accompanied by five of the safety appliance inspectors of the commission, arrived yesterday to attend the conventions. The inspectors in the party include T. C. Hays, J. J. Coutts, James A. Lawson, Charles S. Roberts and Harry A. Adams. The government representatives will remain through the Car Builders' convention, and are interested visitors both in the convention hall and in the exhibits on the pier.

F. H. Clark, general superintendent of motive power of the Baltimore & Ohio, and Robert F. Carr, president of the Dear-

born Drug & Chemical Company, left Sunday morning for Champaign, Ill. Mr. Clark is an alumnus of the University of Illinois, and goes to attend a reunion of the class in which he graduated. Mr. Carr also is an alumnus and goes to attend a meeting of the board of trustees of the university, of which he was elected a member by the voters of Illinois at the last state election.

The announcement in the New York papers of June 13 of the engagement of Miss Mildred Rhoades Whaley to Joseph



**Left to Right—J. F. Sheahan, S. M. P., and B. L. Bugg, Assistant General Manager, A. B. & A.**

Earle Sample is the culmination of a romance which began at the conventions in Atlantic City three years ago. Miss Whaley is a daughter of A. R. Whaley, vice-president of the New York, New Haven & Hartford, and was a visitor at the conventions in 1912. Mr. Sample is with the Hill Publishing Company, of New York, and was here also as a convention visitor. The young people met then for the first time.



**G. F. Laughlin, Gen. Supt., Armour Car Lines, and Mrs. Laughlin**

Geo. L. Lord, manager of the railroad department of the West Disinfecting Company, New York, met with a serious accident on the pier while engaged in arranging the exhibit of his company last Tuesday. Owing to the collapse of a step ladder while hanging an electric sign, the latter dropped and struck Mr. Lord, wrenching his left knee and cracking one of the bones below the knee. Mr. Lord remained in attendance at the booth for several

days before the seriousness of his injuries was known. He is now confined to his room in the Chalfonte and H. E. Daniels, the company's western representative, reports that his condition is improving.

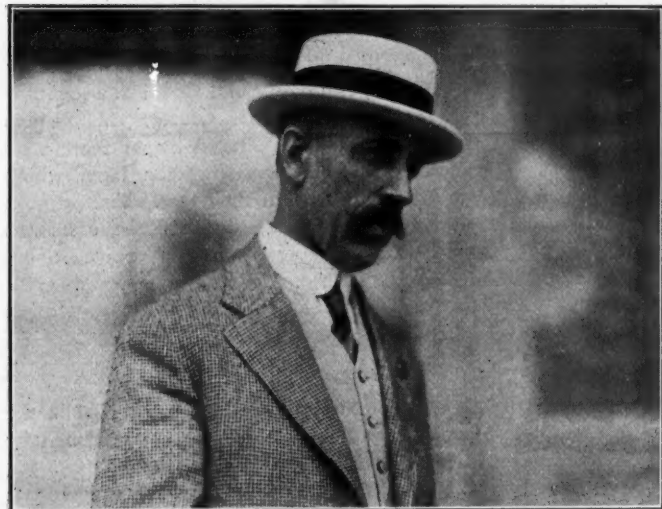
Yesterday morning the members of the enrollment committee presented their chairman, Harold A. Brown, with an unusually complete traveling case. Mr. Brown has been one of the loyal workers on that committee for four years, the last two of which he has been chairman. During that period his friends



**H. R. Thomson, M. M., Newburg & South Shore**

have not only greatly increased in number, but the quality of friendship has been strengthened because of his natural inclination and ability to be both accommodating and fair. The tangible expression of appreciation and respect shown him by his co-workers is something that will serve to remind him of the bright side of a task which, to say the least, has been confining.

Among the interested convention visitors on Saturday and Sunday were Mr. and Mrs. Edward Hungerford and Richard

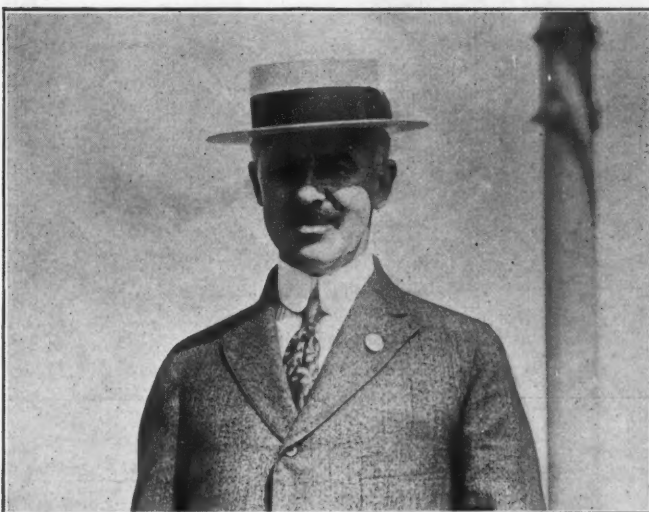


**R. J. Turnbull, Mech. Supt., Missouri Pacific**

C. Ellsworth of New York City. Mr. Hungerford's name is doubtless familiar to many of the convention visitors, because he is probably the most widely read and authoritative writer of non-technical railway literature in this country. His articles and stories regarding railway matters have often appeared in the Saturday Evening Post, the Metropolitan Magazine,

Munsey's, and other publications of general circulation, and he is the author of a very readable and valuable book entitled "The Modern Railroad." Mr. Hungerford has traveled widely in the United States and one of the results has been the production of a book entitled "The Personality of American Cities," which shows his familiarity with the life and atmosphere of almost every large place in the United States. He is, besides, the author of some short stories and two novels. He was formerly editor of the Erie Railroad Employee's Magazine, was subsequently publicity manager of the Brooklyn Rapid Transit Company, and is now advertising manager of Wells, Fargo & Co. and an editor of the Wells Fargo Messenger, which is a monthly paper published by this company. Mr. Ellsworth is widely known in the newspaper field, being editor of the Brooklyn Times. Mr. Hungerford and Mr. Ellsworth returned to New York Sunday, while Mr. Hungerford left for the West for an extended trip.

The Chicago Railway Equipment Company contingent, including President E. B. Leigh, Vice-Presidents F. T. De Long and C. H. Williams, Jr., and George N. Van Sweringen, arrived on Saturday and Sunday, but came by entirely different routes. Messrs. Lee and Williams came by train, while Messrs. De Long and Van Sweringen drove through from Chicago in the former's automobile. They took the road by way of Cleveland, Buffalo, Erie and New York City, leaving Chicago on Saturday, June 5, and reaching New York on Saturday, June 12.



**John McMullen, Mechanical Superintendent, Erie**

The maximum mileage in any hour made by them was in one when Mr. Van Sweringen was at the wheel, and was 27 miles. This is not a large maximum mileage, and yet they did not make less than 174 miles in any day, and in one day attained 212 miles. The nearest they came to having real trouble was about 40 miles from Atlantic City on the road from Lakewood. This was on Sunday evening when it was raining hard. Mr. De Long had just improvised a lunch, which they intended to eat whenever the spirit moved them, when he heard a sound like a peanut-stand whistle and felt one of his tires going down. He had his side curtains down and he immediately decided that he did not intend to get out in the rain to fix that tire. He therefore climbed over into the back seat, lighted a lantern, spread the lunch out on his knees, and they proceeded to eat lunch right there. By the time lunch was finished the rain had ceased and it was possible to fix the tire without any discomfort except that of getting out of the mud. There is some difference of opinion between Mr. De Long and Mr. Leigh as to how Mr. De Long's car is going back to Chicago. Mr. De Long expects it to return under its own power, with him as chauffeur, while Mr. Leigh opines that it will go back in a freight car. In any event Mr. De Long says that the trip down was fine.

### CEILING FAN

The ceiling fan shown in the illustration is being exhibited by the Safety Car Heating & Lighting Company, New York. While the general features are similar to those embodied in the type of fan exhibited by this company last year, and briefly described on page 1403 of the June 13, *Daily Railway Age Gazette*, it has been redesigned so that the entire unit including the motor may be applied below the ceiling of the car. The previous type necessitated the cutting through the ceiling or roof of the car for its installation.

The parts are so arranged that the entire unit may be released from the ceiling plate and removed for inspection by pushing a button, which releases an automatic lock, and then slightly turning the lower portion of the fan towards the left. Electrical connections are made by a plug con-



**Removable Ceiling Fan Unit**

necting which may be readily removed or inserted. The brush boxes on the motor are conveniently located so that brushes may be replaced without disturbing any part of the fan.

These fans are hung from the ceiling in the center of the car from 9 ft. to 12 ft. apart and can be had with lighting fixtures included on the frame of the fan, the combination fixtures being made for either one, two or four lights each. The current consumption of the fans when operating at maximum speed is 75 watts and by means of the revolving deflecting plates a well distributed circulation is provided.

**MONROE CALCULATING MACHINE.**—Among the recent developments for reducing the cost of handling all kinds of accounting work is a calculating machine manufactured by the Monroe Calculating Machine Company, Orange, N. J. One of the notable features is its simplicity; it has a much smaller number of parts than the usual type of adding machine. The operation is simple and may be readily mastered by an unskilled person in a few minutes. It handles percentage, pro-rating, extensions, engineering problems, estimating or any kind of accounting work, every calculation being made by direct methods. The crank is turned forward for addition or multiplication and backward for subtraction or division. The machine is being exhibited during the conventions this year.

### IMPROVED REX CURTAIN ROLLERS

The Curtain Supply Company, Chicago, has recently applied to the Rex curtain rollers a sliding pawl to engage the ratchet in the end of the roller when it is desired to remove the roller from its fastenings. The illustration shows this attachment



**Sliding Pawl Attachment for Rex Curtain Rollers**

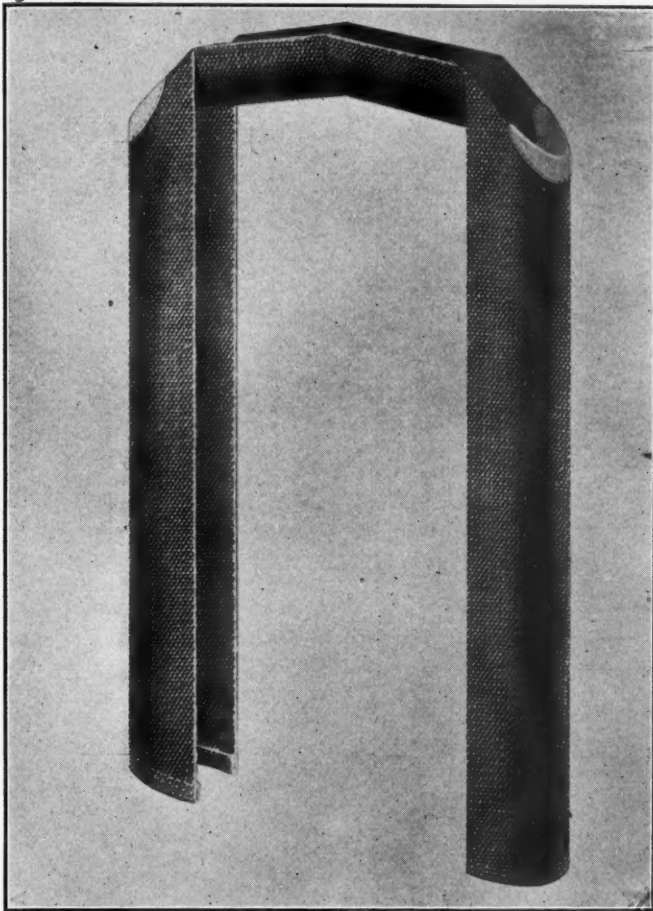
applied to a vestibule curtain roller. The improvement will be well appreciated by those who have had experience with the handling of curtain fixtures in the present day equipment.

**NEW DESIGN OF GRATE BAR.**—There is being shown at the exhibit space of Joseph T. Ryerson & Son a model of a locomotive grate which is the invention of S. D. Andrews, mechanical engineer of the Seaboard Air Line. The principal feature of this grate is the incorporation of wrought iron bars, which are placed in the mold and are cast in the grate. The purpose of these bars is to hold up the grate in case the cast iron is burned completely away, thus permitting the engine to get into a terminal without a failure. It also provides a grate which has greater strength in relation to the weight, with a consequent increase in the air openings.

**FORGED AND ROLLED STEEL SPRING GEAR RIM.**—Included in the exhibit of the forged and rolled steel sections manufactured by the Carnegie Steel Company at its slick works, is a gear rim for a recently developed type of spring gear transmission for electric cars. This transmission is in use on the Long Island and Pennsylvania Railroads, and also under consideration for use on the locomotives for the Chicago, Milwaukee & Puget Sound electrification. Its purpose is to provide a shock-absorbing medium between the motor and axle. This is accomplished by making the gear in two parts so arranged that the torque on the rim is transmitted to the hub through a system of coil springs secured to the hub. The entire transmission is thus relieved of the shocks due to lost motion between the pinion and gear teeth.

### REVERSE UNIFOLD DIAPHRAGM

The Acme Supply Company, Chicago, is exhibiting a unfold diaphragm of a design which permits the use of one piece of belting in its manufacture without cutting or shaping at the corners. The top is of the usual U-shape, while the sides are of the reverse of this shape, the change in section being made by the reverse folds at the upper corners. The belting is reinforced at the corners where the turn is made with specially prepared chrome tan leather and the feet are turned up and stitched securely. Owing to the fact that the sides fold out instead of in any width of belting may be used



Unifold Diaphragm With Reverse Folds at the Corners

without encroaching on the passageway between the vestibules, and this design prevents the fold of the diaphragm chafing the vestibule curtains, and the construction is such that a large amount of expansion is permitted without straining the material.

The diaphragm is made of dyed or water-proofed and fire-proofed belting and may be provided with an auxiliary asbestos woven belting fire-proof hood if desired. It is on exhibit at the booth of the Acme Supply Company.

### SANITARY TOILET

The West Disinfecting Company, New York, is exhibiting a model of a sanitary toilet for use where sewer connections are not available. This toilet, known as the Sanitor, is of metal construction and consists of a case within which is a tank containing a chemical manufactured especially for this use. It is a powerful germicide and disintegrator. A vent pipe is carried from the toilet through the roof of the building. The model shows an application suitable for small railway stations and includes a baffle tank placed underground outside of the building.

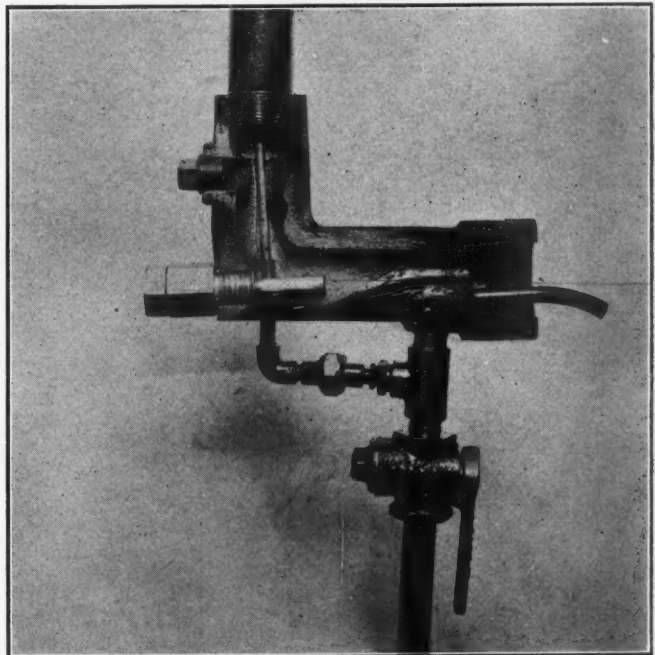
All organic matter is thoroughly treated with the chemical disintegrator and automatically flows from the toilet into the baffle tank. The overflow from this tank is said to be entirely sterile and odorless.

An application of the same principle is now being developed for use on passenger coaches.

### LOCOMOTIVE SANDER

The White American Locomotive Sander Company, Inc., Roanoke, Va., is exhibiting a locomotive sanding device, which includes a means of clearing clogged sand pipes both above and below the points of its application. The device is shown in section, in the illustration, and is simple in construction.

The trap consists of an elbow casting through the wall of which the air nozzle is inserted. It is located at any convenient point in the sand pipe and the air nozzle may be adjusted to deliver any predetermined amount of sand. Another air connection is made to the trap from which lead two lines of small brass pipe, one extending up through the sand pipe to the dome and the other down into the delivery pipe below the trap. The end of the upper pipe is closed and a number of small holes are drilled through the walls at various points, at an angle which delivers the air downward. The other pipe is open at the end. Should the sand pipe be clogged below the trap, the admission of air to the auxiliary connection provides a strong downward blast which clears it without the necessity of leaving the



Self Cleaning Locomotive Sander

cab. Should the pipe be clogged above the trap, the upper branch of this connection will break up the body of wet sand and carry it down to the trap.

This device is being tested in service on three railroads. It is said to be giving good service, and to require practically no attention.

**MALLEABLE IRON EXHIBIT.**—In an article in the June 14 issue of the *Daily Railway Age Gazette* describing an exhibit of malleable iron castings made from a recently developed mixture, the name of the exhibitor was given as the National Malleable Castings Association. This is incorrect, the name being the American Malleable Castings Association, with headquarters in the Penton Building, Cleveland, Ohio.

### M. C. B. BILL MACHINE

Included in the exhibit of the Burroughs Adding Machine Company, Detroit, Mich., is a machine recently developed especially to print and add the items of M. C. B. bills which are made up from the billing repair cards. The machine has a 17-column keyboard which can be split into separate adding sections so as to handle the different items required for this kind of work with the greatest dispatch. It has special keys for fractions and is equipped with automatic cross tabulating, counter-control, and has injector and ejector devices for inserting and removing forms quickly and evenly. It is electrically operated.

With this machine the operator is said to be able to register 55 cars to the sheet, whereas by hand but 37 can usually be included on one sheet. The bill is footed automatically as the items are listed. On the Michigan Central, where this machine is in service, the following comparison of the daily output by hand and by machine was established:

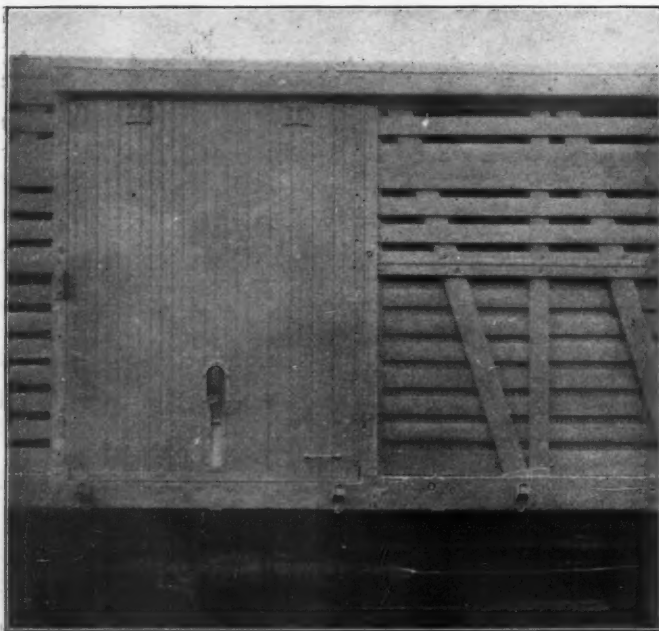
By hand .....	1200 cars per day of 8 hrs.
By machine .....	1875 cars per day of 8 hrs.

On this basis one man with the M. C. B. billing machine will bill 14,852 more cars in 22 full working days of 8 hrs. each than one man can handle by hand, which is equivalent to a saving of 12 days per month for one man. On a salary basis of \$75 per month this is equivalent to an average saving of \$30 per month or \$360 per year for one man working with the bill machine.

### FLUSH BOX CAR DOOR

The box car door shown herewith has been designed to meet the requirements which, within the last two or three years, have come to be considered essential for satisfactory service. To adequately protect the lading the door must be storm, spark and burglar proof and to best meet these conditions a flush door is necessary.

The way in which the door is operated will be understood

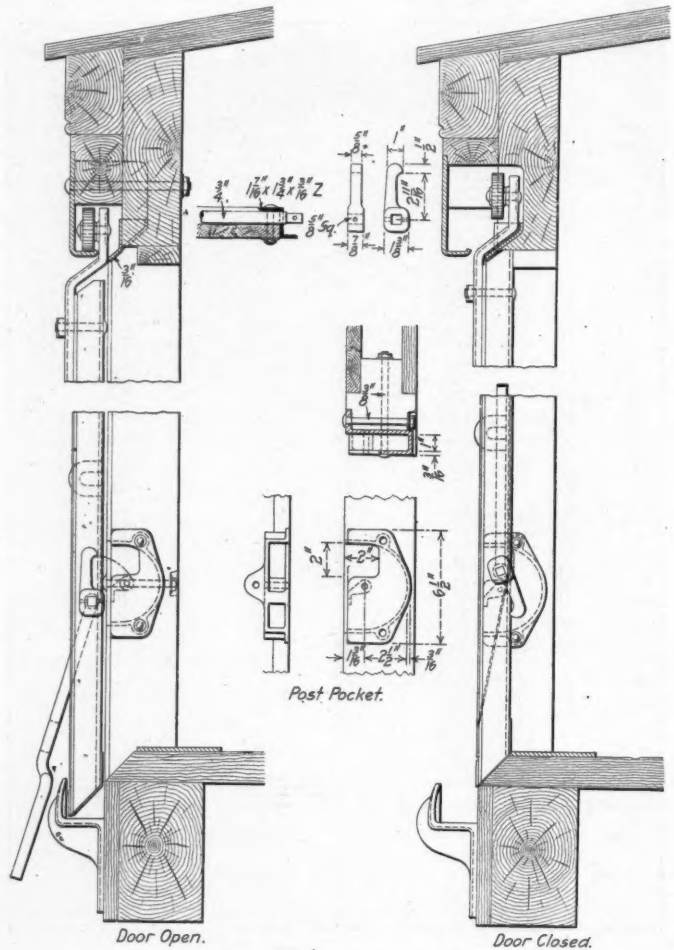


Ohio Flush Car Door.

by referring to the drawing showing sections of the door in the open and closed positions. The track on which the hangers operate is attached to the outside of a filler or water table which is bolted to the side plate and is so formed as to protect itself from the weather. In closing the door the top is first drawn inward and upward and is guided into the closed position by means of an oblique angle plate

which enters between the diagonal portion of the door hanger and the top of the door.

The closing mechanism consists of a horizontal shaft inside the door, to each end of which a pawl is attached, these being located at either side of the door. The shaft is operated by means of a lever placed in a pocket near the center of the door. Malleable iron pockets are set into the door posts in line with the pawls, and in these are shoulders which serve as fulcrums against which the pawls operate in lifting and closing the door. The edges of the door are faced with Z-bars so placed that when the door



Sectional Views of the Ralston Car Door

is closed the outside edges of the Z-bars fit into rabbetted pockets in the door posts and completely cover the pawls and the malleable iron pockets which hold the door in position. The operating lever is locked by means of a staple and latch pin and when properly sealed it is impossible to open the door without first breaking the seal.

The door is claimed to work freely and smoothly and may be opened by simply removing the latch pin from the staple, which allows the door to drop down away from the car onto the track. It is known as the Ohio flush side door and is being exhibited at the booth of the Ralston Steel Car Company, Columbus, Ohio.

**YOUNG VALVE GEAR.**—In an article published in the June 11 issue of the *Railway Age Gazette*, Daily Edition, entitled Young Valve Gear, Reverse Gear and Valve, the following statement was made: "This valve gear was introduced about two years ago, the most notable feature of the motion produced being the long travel of the valve." While the principle underlying the design of both gears is the same, the above statement is misleading in that the two gears are not the same, being of entirely different construction and covered by separate patents.